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Syme Memorial Lecture.[1]

WHAT IS THE OUTLOOK FOR THE MEDICAL PROFESSION?

By BASIL KILVINGTON, M.D., M.S. (Melbourne), F.R.A.C.S., *Melbourne.*

THE object of this oration is to perpetuate the memory of George Adlington Syme, who was for many years a surgeon at the Royal Melbourne Hospital, and whose influence moulded the destinies of the medical profession more than that of anyone in Australia. Syme retired from active service at the hospital in 1924, and died in 1929, so that many of our recent graduates have never seen him, and still older ones do not remember his professional work.

In future years, when Syme is but a memory, this oration will consist probably of some philosophical, scientific or medical subject with reference mainly to his name. I think, while some of those who worked under him are living, an account should be given of the man himself by those who knew him.

A very full history has been given by a previous lecturer, Dr. Kenny, so I shall allude only briefly to this aspect, chiefly from the point of view of a student and resident medical officer under him.

Syme's ancestors came from the south of Scotland and his grandfather, George Syme, who married a certain Jean Mitchell in 1800, was a schoolmaster at North Berwick. He was a stern, undemonstrative man, though beneath this stoic exterior he hid a world of devotion to his children, and he denied himself to give them all that most valuable asset, a good

[1] Delivered before a meeting of the Victorian Branch of the British Medical Association on September 22, 1938.

education. David and Ebenezer, two of these sons, came to Melbourne in the very early days (1856). Ebenezer was at first a minister, but left this calling to become a journalist.

The Age newspaper was started in 1854 by two brothers, John and Henry Cook, who were merchants, and the Syme brothers bought this historical journal from them. David Syme took up contracting, as the paper did not hold out a living for both of them, but Ebenezer died in 1860 and David then took complete management.

Under him *The Age* became a great influence in the land; it advocated what is called protection or the fostering of secondary industries. David Syme became a "power behind the throne", and was consulted even before the portfolios in the Cabinet were allotted. He was offered a knighthood, which he declined.

George Syme's father, George Alexander Syme, was born in 1821 at Montrose, Scotland. He was a master of arts and also a minister, but his health necessitated his leaving the misty climate of Scotland. He came to Melbourne in 1862, and was appointed to and continued to be editor of *The Leader* for twenty years. He married Miss Susannah Goodyear, and his son was born before they arrived in the colony, in 1859, at Nottingham.

Thus, Syme's ancestors were Scottish, highly educated and had religious inclinations. He went to one of our great public schools, Wesley College, in 1873, taking several exhibitions, and commenced the study of medicine in 1877. He had several well-known men as his fellow students: Sir James Barrett, now Chancellor of the University of Melbourne; Dr. Charles Bage, afterwards Chairman of the Felton Trust, Loughney; and Dr. Mullen, who was not only a graduate in medicine, but also in arts and, I believe, engineering. During his medical course, he and Barrett ran neck and neck. Sometimes Barrett came first and, what is perhaps more remarkable, sometimes Syme beat the present Chancellor. Syme graduated in 1881 and obtained the scholarship in medicine, surgery and forensic medicine. With his eminent colleagues, he became a resident medical officer at the Royal Melbourne Hospital in 1882 and 1883.

The senior surgeon who most influenced him was Thomas Naughton Fitzgerald. I just remember him when he was about seventy years of age, and I was for a short time his resident medical officer. Fitzgerald was a short, rather stout man, with very thin legs, and possessed side whiskers; but he was a real Irish gentleman. He came a little too late to assimilate the principles of Lister, but he was the most dexterous operator I have ever seen, and it was a pleasure to see him palpate and examine a tumour. I have seen him perform an interscapulothoracic amputation with an audience of over one hundred men. The technique was brilliant, but the patient died of septicæmia. I have frequently seen him blow his nose, after extracting his handkerchief from his pocket, during the middle of an abdominal operation, and continue the operation without rinsing his hands—and no one wore rubber gloves then. Very frequently the wound healed by first intention, as the dexterity did not damage the tissues.

Syme was a great admirer of Fitzgerald, but escaped his teacher's weakness, since he had worked for a time under Lister at King's College Hospital, and appreciated this master's teaching of asepsis.

Syme, Moore and Fitzgerald usually played tennis together in the mornings before breakfast, and I think these two men (Moore was a contemporary) influenced Syme's professional work more than any other. Syme obtained his fellowship of the Royal College of Surgeons in 1885, and on his return from England he became demonstrator in anatomy and out-patient surgeon at the Royal Melbourne Hospital. He had a short, clipped beard in those days. I remember him well, when I did my medical course in the nineties. He was a careful and conscientious teacher in both anatomy and surgery, and the students were anxious to go round the hospital with him, though we were a little frightened at first at his abrupt manner and his monosyllabic replies to any question we asked.

In 1889 Syme became surgeon to the police force. He kept this position after he retired from professional work, and, with absence due to war service, held it to the time of his death.

You may ask what I think of Syme as a surgeon. When I was a resident medical officer at the hospital, the older generation (Fitzgerald and Ryan) were then approaching their retirement, and of the principal younger men entering the field there were Syme, Moore, Rennie and Langlands. Rennie was a remarkable man, but died shortly after becoming an in-patient surgeon. He was an expert anatomist, and as a relaxation after a strenuous day would read Osler's "Modern Medicine", when the modern surgeon might take up a light novel or detective story.

Syme possessed nothing comparable with the operative dexterity of Fitzgerald and Moore. He was very short-sighted and rather clumsy with his hands; but he had excellent judgement and profound caution, and he got very good results. He was largely called in for a consultation because of his wide experience, his sagacity and his absolute integrity.

No surgeon possesses every attribute, and I think senior students and resident medical officers very shrewdly sum up a teacher's strong and weak points.

I should say that Syme's medico-political activities were his main claim to fame. He was a prominent member of the Faculty of Medicine and Council of the University. He could have held the lectureship in surgery had he wished; but I think his vast private practice and many appointments decided him against taking this. He was, for some time, chairman of the committee of management of the Royal Melbourne Hospital, which calls for much ability, and, I should say, very much patience.

In the old days the hospital's honorary medical officers were elected periodically by anyone who

subscribed, or was supposed to have subscribed, the sum of one pound to the hospital. In self-defence, those on the staff were compelled to exercise a block vote to retain their positions, so that it was rarely that an outsider was elected. The election scenes were unspeakable, and Charles Dickens describes nothing worse in the election at Eatanswell in "The Pickwick Papers".

I unsuccessfully stood for the position of out-patient surgeon in the last of these contests; but it was impossible to contend against the block vote, which contained not only respectable citizens, but also Chinese, corpses and paupers.

Moore principally, and Syme as well, were instrumental in introducing the present system of election, first by the committee of management and later by the advisory board, who make recommendations to the general committee after the selection. Thus, not only vote buying, but also personal canvassing, which was humiliating, were abolished.

There was always a strong bond of comradeship between Syme and my old teacher, Sir Harry Allen. They not only worked together, but played together. I remember, on one occasion just after I qualified, staying at an old hotel at Marysville. The hostess, Mrs. Keppell, remembered well the days of the Kelly gang, and the gold escort coming through on its way from Woods Point to Melbourne. On the sideboard there were some wonderful china and an old visitors' book containing famous early Victorian names. One early group consisted of university students and young graduates who were on a walking tour. Among the group were Dr. Harry Allen and Master George Syme.

Syme was, for many years, Chairman of the Federal Committee, and rendered special and valuable service to the profession. On several occasions he was President of the Victorian Branch of the British Medical Association and also of the Intercolonial Medical Congress in Adelaide in 1905, and in Melbourne in 1923. He played a leading part in medical politics. I shall merely mention two instances as coming in my purview.

Nearly twenty years ago there was a prolonged dispute with the friendly societies in an endeavour to raise the fee for a lodge member (and family) from 15s. to 20s. *per annum*, and also to have an income limit fixed, so that the doctors should cease to attend wealthy lodge members for the same small fee. Conference after conference failed; and at last, the Premier, the late Sir William McPherson, interviewed Syme. He was not at that time President of the Victorian Branch of the British Medical Association, but all sections of the community had such trust in his prudence and honesty that they agreed to accept his advice. Both the friendly societies and the medical profession agreed to Judge Wasley's sitting and deciding the merits of the case. He promulgated the so-called "Wasley Award", which stated the 20s. *per annum* asked for by the doctors as a fair remuneration; and this award holds at the present time.

Later, when an attempt was made to found the Australasian College of Surgeons, interstate jealousy almost prevented its formation; but at the medical congress in Dunedin, in 1926, where men from all States were gathered, Syme, actively assisted by Kenny, succeeded in overcoming the difficulties. The delegates there formed a provisional committee, of which Syme was president. The idea of the formation of the college did not originate with him, but with Sir Louis Barnett, of Dunedin, whom we still have with us.

I need hardly refer to the many Royal commissions relating to the health of the community in which Syme played a prominent part.

I would but briefly allude to some of Syme's social activities. I think he was seen at his best at a dinner. Usually silent or uncommunicative, he blossomed out under the congenial influence of food and company, and anyone fortunate enough to sit near him got the benefit of his vast experience, his sound opinion, and perhaps, above all, his large fund of stories.

Syme was a member of the Beefsteak Club, and for thirty years of the Wallaby Club. The latter consists of 75 members, of all occupations of life, who meet once every two weeks, and during their Saturday and Sunday walks discuss all topics. Literature was the one that most interested him. He succeeded Sir Robert Garren as president of the club.

There are two other activities to which I would refer: Syme's intense interest in the repertory theatre and his war service.

Syme left Australia in 1914, with the rank of lieutenant-colonel, on the *Kyarra*, and showed a willingness to act in any useful position. Considerable comment was caused when he was given charge of a venereal diseases and measles camp; but his experience was too valuable for this to continue, and he was made surgical consultant on the ship *Gascon*, which was present at the landing at Gallipoli. But his overseas service was not of long duration, as he got a poisoned finger from a spicule of bone when operating and barely escaped with his life. For some time he had an almost useless hand, and this condition he thought would terminate his operative work. Fortunately it recovered sufficiently for him to practise his profession actively for at least ten years.

When he retired in 1924 from general surgical work he had a knighthood conferred upon him; but he continued to work at the Repatriation Department till the very day his last illness struck him down with an apoplexy at a university graduates' dinner on April 12, 1929.

Syme's great interest was in the medical profession, especially in its relation to the general public and to the State. Though he did not disbelieve in examinations, he held that a doctor should possess other qualifications, such as character, personality and general culture, beyond his technical knowledge. In a personal talk with him, I found that he thought that a specialist

should graduate from a probationary period in general practice. In this way he considered that a medical man obtained a wider outlook. He regretted that life was too short for a medical man to take a cultural degree, such as an arts degree, as well as his own specialty. This was done when the medical course was shorter and less exacting than it is at present.

Many of our teachers in medicine, such as J. W. Springthorpe, George Howard and Peter Bennie, were graduates in arts as well as in medicine; but practically no one in these days of intense specialism possesses the combination of a literary and scientific university training.

It seems rather a pity that the hospital advisory boards now rather debar a man in general practice from obtaining a full staff appointment, though it is not advisable that he should continue a mixed practice after his appointment as a specialist. Not only does the policy encourage a narrow outlook, but it prevents many younger men, who cannot stand the financial strain of sitting down in Collins Street, from obtaining such hospital posts.

Another favourite maxim of Syme's was that no set of lectures should be made compulsory. "By their fruits shall ye know them" applies to lectures; for there will be no lack of students if the subject is adequately presented by the teacher.

I would close this personal account by relating an amusing incident, which is strictly true, and which shows Syme's rather unprofessional appearance and manner. He had suffered a minor accident just outside a public hospital, and was taken in and examined by a young resident medical officer, who had qualified after Syme had given up hospital work. After the young man had examined the patient's foot, Syme asked him if he thought there was any fracture present. The reply was: "What do you know about fractures, my little man?"

At the present time the medical profession is at the parting of the ways. A radical alteration in its relation to the public is shortly to come into force, and I wish to speak on this matter. I know it is the subject that would have occupied Syme's mind had he been still with us.

This is hardly the occasion to give decided opinions on a controversial subject like the national health insurance scheme, which is still *sub judice*; but I shall try to treat it in an historical manner, though it is hard to come close to the fire without being scorched.

Of the many innovations of the last fifty years, the recognition of the value of so-called "social services" is one of the most interesting and important. These include free education and vocational training and prevention of infectious and occupational diseases; but the term "social service" calls up in our minds mainly payment in old age, unemployment and invalidism, and especially efficient medical attention in case of sickness.

I should like to quote some figures for Australia, showing the increase in expenditure in the last twenty-five years. In 1910 Australian social expenditure totalled £6,000,000, and in 1937 it had increased to £39,300,000.

In 1909 and 1910 there were 65,000 people drawing old-age and invalid pensions, which were at a maximum of 10s. a week; at the end of the last financial year there were 300,000, with a maximum pension of £1 a week. The cost of these has risen from £1,500,000 to £14,000,000. These figures are taken from the circular issued by the Bank of New South Wales in March, 1938. There are three main underlying reasons for this endeavour to help the poorer and less fortunate members of the community: (i) the humanitarian motive, which was the earliest and most commendable one; (ii) the idea of improving the general welfare of the community, so that the race should become more healthy and virile (very essential in these times of international competition); (iii) some provision against suffering and poverty as a definite movement against socialism and anarchy.

This last is the motive that induced that most astute of modern statesmen, Bismarck, to introduce a sickness insurance scheme in 1883. I think the introduction of the dole scheme in England, at the close of the Great War, when so many men were out of adjustment, really prevented a revolution in Britain.

One of the main features of modern civilization is that a large number of the community are existing very close to the bread line; they have little or no reserve against the rainy day of sickness or unemployment. The thrifty can put away a small amount of their earnings, the improvident save nothing; but some form of collective saving can do much to alleviate the risk of misfortune to which every worker is prone.

On the law of averages a man is incapacitated for a certain time in his life, which can be calculated. The amount necessary to put by on an average can also be calculated, and the greater the number of contributing individuals, the more accurate the estimate becomes. This is the basis of all insurance schemes, be they life, sickness, accident or unemployment insurance, or any other form.

As a rule the improvident man will make no provision for himself; so any arrangement is of necessity compulsory, and only legal compulsion by some government can effect it. Voluntary insurance, social or otherwise, is seen in the activities of friendly societies and trades unions. These have played such an important and meritorious part in our social system that I might very briefly give their historical development.

At the time of the foundation of Rome, *collegia* composed of common people were formed for the relief of monotony and encouragement of social intercourse, and in A.D. 133 the College of Diana founded a funeral benefit in addition. The entrance fee was the equivalent of 16s. 8d. and a flagon of wine, and the monthly subscription was the equivalent of 2½d. The funeral expenses and entertainment of members were provided for, but it is doubtful whether any aid was given in sickness.

The birth of the friendly societies occurred in the middle of the seventeenth century. They encouraged festivities and pageantry, and they also allotted payment to sick members. With the absence of any statistical records, however, their position was always uncertain, and some became insolvent. In about 1848 an epochal improvement was originated by a certain Henry Radcliffe, who was a member of the Manchester Unity Order of Oddfellows. He compiled the famous Radcliffe tables, which are the actuarial basis of friendly societies. These were also the basis of the tables published by Alfred Watson, in 1903, which are the foundation for the British national health insurance scheme. The friendly societies have played such an important and valuable part in sickness benefit, and are so accustomed to doing the work economically, that I think they should be kept on as the main approved societies to administer the present national health insurance scheme.

It is recognized that any insurance scheme, as I have stated, must be compulsory; and it is generally agreed that it should also be contributory—that is, that an insured person should pay a portion of the cost. Not only does this preserve the worker's self-respect, but also the cost to the ordinary taxpayer would otherwise be prohibitive. In the present English scheme the worker, the employer and the State (that is, the general taxpayer) each pay one-third.

Though sickness insurance was known in the coal trade in County Durham in 1792, it really was first practised extensively in Prussia in the mines, smelting works and salt works, the employer and worker each paying half the necessary contribution. This scheme gave Bismarck the idea of bringing it in extensively, and recently one-third of the population of Germany came under its influence. It has always struck me as strange that in these schemes in all countries the worker alone was provided for, regardless of sex, except for maternity benefits. This is more remarkable in that the bulk of the medical attention is given to the wife and family of the insured. The friendly societies arrange for the whole family; but the reason the State does not undertake this is the expense involved. I believe that some comprehensive scheme was contemplated in England when the War broke out, and probably when the general waste of money on armaments in all countries ceases, it will be taken up again. However, we are having only the first instalment in Australia. I suppose that the scheme will provide for the breadwinner, and the friendly societies for the rest of the family. Probably the financial adjustment of this hybrid scheme will be a fruitful source of dispute.

The relations of the medical men with the friendly societies have accustomed the medical men to taking *per capita* payments instead of remuneration for individual visits. We are rather fortunate in having the experience of England on which to base an insurance scheme; and two experts, Sir Walter Kinnear and Mr. Ince, came to Australia to help bring the infant into the world.

The National Health Insurance Act in England received the Royal assent on December 16, 1911, and medical benefits commenced on January 15, 1913. The British Medical Association had previously prepared a scheme of its own; but I do not think that any medical practitioners' scheme will ever be a success, since it is not compulsory and can hardly be made so. After much negotiation the *per capita* payment was fixed at 7s. in 1913, raised to 13s. in 1920, and reduced to 9s. 6d. in 1922, when economy was necessary. A special court fixed it at 9s. in 1923; and in October, 1931, the medical men accepted a reduction of 10% on this for reasons of economy. I should think that the amount would be varied only with a considerable alteration in the cost of living.

It is interesting to note that the English medical practitioners vigorously opposed this scheme at the outset, but were forced to accept it ultimately, as the insurance committees obtained the services of 80% to 90% of the medical men in the industrial districts. I shall merely quote the words of Dr. Cox, Secretary of the British Medical Association, to show that the terms ultimately offered were satisfactory to the profession:

> We have done well. We all admire a man who does not know when he is beaten. The trouble with the British Medical Association is that it does not know when it has won.

Does this statement apply to us in Australia?

Some modification of the national health insurance scheme is necessary in some of the country districts in Australia. It is often contended that practitioners will not go to the country, but prefer to stay in the cities, and that the people in many farming districts have to be treated by a bush nurse. I do not agree that the loneliness or scientific isolation is altogether the explanation of this state of affairs. For example, many towns in the Mallee country can well support a medical man when seasons are good, but in times of drought or of low prices for primary products they are not able to do so. I have known a medical man purchase a practice in these areas in good times and to abandon it in the depression, as no living could be made then. I think that the only means of inducing medical practitioners to give constant service would be a government subsidy in these bad seasons; perhaps the Commission will consider these difficult areas.

The amount of payment (11s.) offered to the doctors for a general practitioner service in Australia was based on the value in Australian money of 9s. sterling, and on statistical data obtained from payment for attendance to New South Wales friendly societies. These two divergent premises gave the same result.

I would point out that the Australian equivalent of the £250, which is the maximum permissible income under the English scheme, is about £312, and not £365 as proposed; I consider this £365

decidedly too high. In addition, the scheme includes all manual workers, even though their earnings are higher than this; but they often have broken periods of unemployment.

There are two special differences which English experience does not quite decide for us in Australia: (i) the cost of long-distance travelling, necessary in a large country with a sparse population (probably the only condition approaching this is found in the Scottish highlands); (ii) the difficulties of the outlying and very poor districts, where no contribution would support a medical man.

Mr. Ogilvie, in Tasmania, has attempted to solve this difficulty by appointing government medical officers, who are paid a salary of £600, rising to £850 a year, *plus* a house allowance of £50 and a gratuity of £50 a year, paid at the end of three years' service, if their work is satisfactory to the Director of Public Health. By this scheme the doctor is allowed a month's holiday each year, in order to "apply his mind anew to the study of the most modern methods of treatment given under the best conditions". I presume this month's respite would be given even if the medical men were inclined to apply their mind to golf and fishing. Medical attention is free to everyone, at either the practitioner's residence or the patient's home, between 9 a.m. and 7 p.m. on week-days, between 9 a.m. and 12 noon on Saturdays, and not at all on Sundays. The free service extends to maternity cases, but only at approved hospitals. Outside these hours the medical men may charge £1 1s. for each visit, and 6d. per mile travelling fees; he may charge the same amount for a confinement if it does not eventuate during the prescribed hours. This scheme makes an attempt to stop overworking of the medical man, and if he is ambitious it allows him to improve his knowledge. Dr. Carruthers, the Director of Public Health in Tasmania, informs me that it is compulsory for a medical practitioner, if available, to answer a call which does not come within the prescribed hours; but he charges for this service.

This scheme is the only one I can imagine possible in these out-of-the-way places, which I know well; but it practically means nationalization of the profession if it is extended, and political pressure may easily force the encroachment gradually.

Curiously, the day I wrote this I received a letter from a medical man who was a fellow student of mine and now practises at Flinders Island, which has a population of about 600 and an area of 500,000 acres. He made the following statement:

> I am in the Tasmanian Government and it is good. The hours are 9-7 free, all mileage paid at the rate of 6d. a mile by the Government, and I may charge a guinea for any work before 9 and after 7.

This is not a hard existence for one who is not ambitious, and who is perhaps not now young. It appears to me that the profession is at the cross-roads of its existence. The old individualistic attitude of the medical man is going, and with it to my regret, the old-fashioned, cultured, beloved and often very shrewd general practitioner. But in these post-War days quite a number of our old associations are altering, and we are powerless to stop the change.

In a few generations the high death duties will almost abolish the old landed gentry in England, and there are not going to be very many rich men. There certainly will not be very much absolute poverty in the future, at any rate among the British race. Though the financial position of the general practitioner has improved in England under national health insurance, I rather think the standard of scientific work has deteriorated. The general practitioner has largely drifted into the position of a clerk who keeps records and sifts the sick people, sending to hospitals or to specialists any with serious diseases. The risk of the deterioration of the profession is what I fear most with national health insurance. There are certain conditions under which a general practitioner is entitled to charge for expert attention, and I would urge all who can to qualify for this promotion in one or more of the following ways: (i) by having held a hospital appointment, which gives experience in a certain kind of specialty, and also, I presume, the holding of a higher degree; (ii) by having taken a post-graduate course of study in this subject; (iii) by being recognized by the rest of the profession in the district as a specialist.

I think that the medical man will find it easier to get out of the ruck in this country than in England.

There are certain country districts where the doctor is of necessity compelled to perform emergency operations, and general practitioners should strive to improve their skill and knowledge by obtaining higher degrees, by coming regularly to centres for post-graduate study, and perhaps occasionally by going abroad.

Naturally I do not advise that a general practitioner should attempt the graver operations, which should be performed by a skilled specialist; but one cannot draw the line in these cases. The decision should be left to the good sense and honesty of the local doctor, just as it is at the present time. Not only will this add to the income of the general practitioner, but it will also add to his scientific interest in his profession. A patient requiring some extra thought and skill breaks the monotony of a day of routine, just as "the shadow of a rock in a dreary land" cheers the traveller.

Whether we like it or not, the first instalment of national health insurance is at hand. There will be much argument before the details are finalized, and our conditions and temperament are not quite the same as those of the people in England. Perhaps it will be fortunate to have the scheme finalized, since otherwise a State medical service with complete nationalization of the profession might come about. In New Zealand a non-contributory and free medical service to all is being discussed. In this case all individuality would

be lost and the standard of our profession lowered. One may ask, what is to be the future in the profession of medicine?

I think that there is no doubt that medical insurance will be extended to the wife and dependants of the insured person, as was anticipated in England when war broke out. This development, I am informed, may come about in the very near future, and the profession should be prepared for this extension and decide at once what their attitude will be, and what conditions they will ask for. Dental and hospital treatment and home nursing will gradually be added.

The next step will be the gathering-in of the specialist, with regulations. Charges will be fixed, and I think the honorary system at the hospital will give way to specialists paid a whole-time or part-time salary.

Finally, probably only about 10% of the population will be treated as ordinary private patients, as they are at present, and the so-called private practitioner will form but a small part of the profession.

Yet with all these changes there will always remain the scientific interest in medicine. No two patients and no two illnesses are exactly alike, and research is always marching on. The medical man will be compelled to read and study to keep abreast of the times. In the next quarter of a century there will be great changes in our profession, and it will be fortunate if they are led by men like George Syme, whose honesty and wisdom are recognized by all.

When I look at the excellent portrait hanging in this room, I picture a short, stocky man, short-sighted, and perhaps replying to a question by a single word or not at all. You perhaps thought that he was unsympathetic till one of his rare smiles made you realize that you were his friend. When I look back on Syme I always think of Macaulay's summing-up of the character of Dr. Samuel Johnson in the excellent biography of that famous English philosopher and writer:

> Our intimate acquaintance with his peculiarities of intellect and manner serves only to strengthen the conviction that he was both a great and good man.

CARDIAC IRREGULARITIES OTHER THAN AURICULAR FIBRILLATION.[1]

By WILFRED EVANS,
Sydney.

Of all cardiac irregularities, probably the least known are those originating in the sinus node.

Sinus Arrhythmia.

In sinus arrhythmia the cardiac rate varies with inspiration and expiration. A long and deep inspiration materially speeds up the rate, which on expiration becomes slower. In the electrocardiogram the relationship of the individual waves to each other remains unaltered, but the distance between the complexes is variable. The diagnosis is readily made by the stethoscope, and the variation in rhythm clearly seen in the electrocardiogram.

It was once thought that sinus arrhythmia was a sign of the healthy heart. This is not entirely true. Certainly it is more common in youth than in old age, and may be abolished by rheumatic fever or other infection; but in elderly persons with arteriosclerosis or heart disease a considerable degree of sinus arrhythmia may be found as a distinctly abnormal sign.

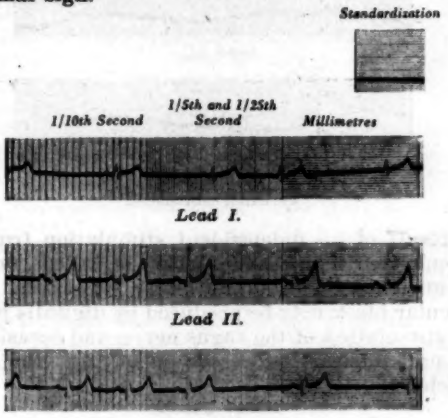

FIGURE I.
Sinus arrhythmia.

Sino-Auricular Block.

When the sino-auricular node is much depressed and fails to send forth an impulse at the usual time, the condition is known as sino-auricular block.

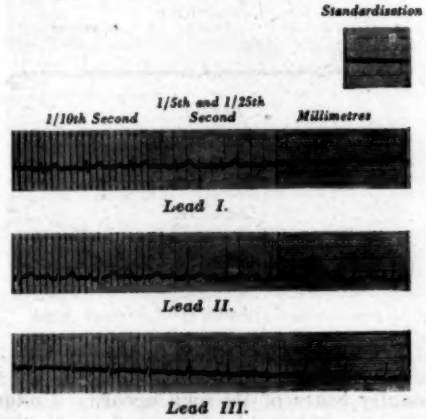

FIGURE II.
Sino-auricular block.

One complete beat is dropped from the sequence—there is neither an auricular nor a ventricular contraction. The distance between the preceding and

[1] Read at a meeting of the Section of Medicine of the New South Wales Branch of the British Medical Association on August 18, 1938.

subsequent contractions is usually a little less than that between any two beats.

The auricular contractions may drop out altogether and the ventricles continue to beat as

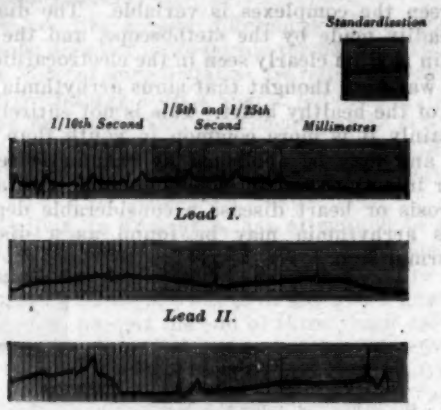

FIGURE III.
Auricular standstill.

the result of an independent stimulation from the auriculo-ventricular node. This is called complete sino-auricular block or auricular standstill. Sino-auricular block may be produced by digitalis poisoning, stimulation of the vagus nerve, and occasionally by pathological processes involving the right auricle.

Nodal Escape.

Nodal or ventricular escape is a rather uncommon mechanism usually associated with a relatively slow pulse and sinus arrhythmia. The sinus node is so slow in producing stimuli that the ventricle

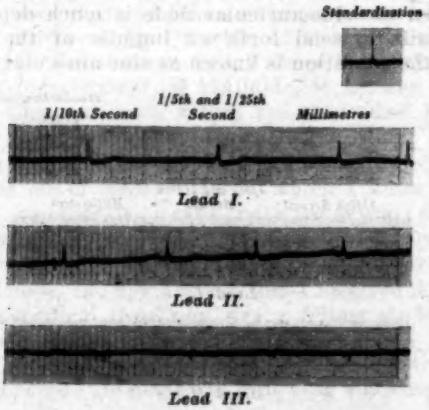

FIGURE IV.
Ventricular escape.

occasionally beats of its own accord. Under these circumstances it is said to escape from the influence of the sinus node and auricles. This abnormality has usually no importance in prognosis, being due to a depression of the sinus node by hypertonicity of the vagus. However, the same condition may be produced by inflammation or defective blood supply to the sinus node. If the escape is continuous and the auriculo-ventricular node controls the ventricular rhythm entirely, it is idioventricular rhythm. If in addition the auricular action is controlled, it is auriculo-ventricular nodal rhythm.

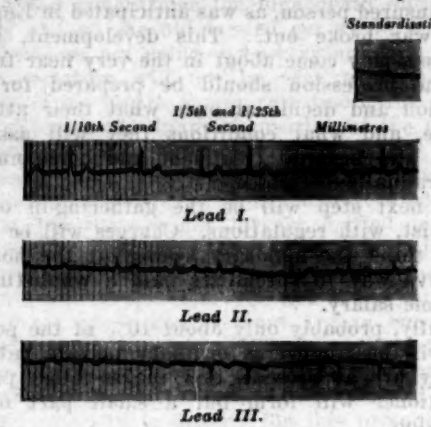

FIGURE V.
Wandering pacemaker.

Wandering Pacemaker.

When the stimulus is partially displaced from the sinus node, we have the condition known as wandering pacemaker, and variable types of *P* waves represent the auricular complexes. The explanation has been offered that both the sinus and auriculo-ventricular nodes are pacemakers, and this gives rise to the abnormal contour of the *P* waves and the variable *P-R* intervals.

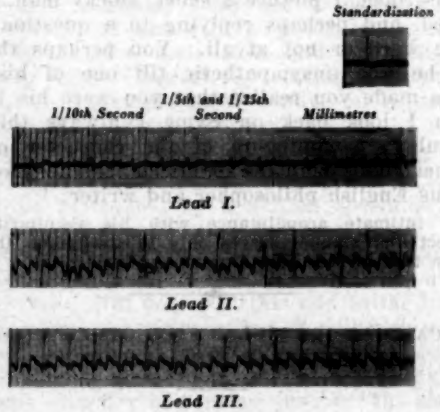

FIGURE VI.
Auricular flutter.

Auricular Flutter.

Auricular flutter usually causes a rapid regular rhythm; but the beat may be irregular, because of varying degrees of block (1:1, 2:1, 3:1, 4:1) in regular or irregular sequences, so that the arrhythmia may be an orderly or very disorderly one. Careful study, however, will usually reveal a dominant rhythm, although the heart action appears to be absolutely irregular.

Premature Contractions.

Premature contractions, or extrasystoles as they are sometimes called, are due to abnormal stimuli which arise in various parts of the heart and disturb the normal rhythm.

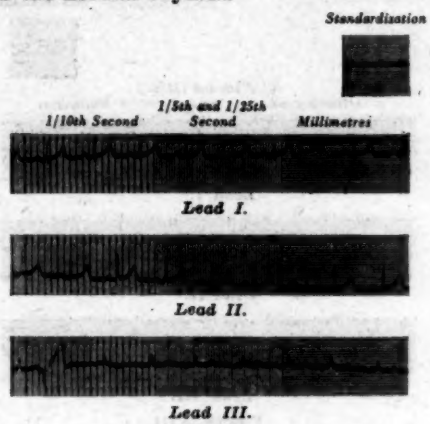

FIGURE VII.
Auricular premature contractions (extrasystoles).

As the beats are premature and not additional, the term premature beat is more correct than extrasystole. They are the commonest of all cardiac abnormalities, and are experienced by most people at some period of their life.

The stimulus for premature contractions usually rises outside the limits of the normal pacemaker, the sino-auricular node, rarely within it, and it must take place when the cardiac muscle is responsive and not refractory.

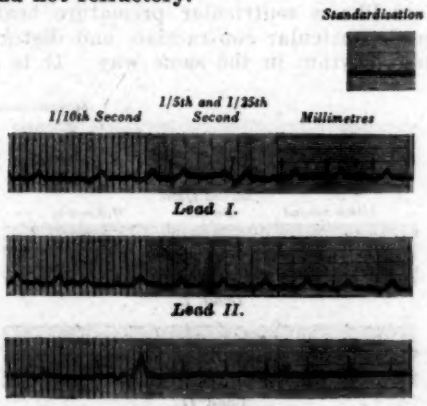

FIGURE VIII.
Auricular premature contractions (extrasystoles).

Auricular Premature Beats.

Auricular premature beats are abnormal waves starting in the auricular muscle and spreading in all directions; they not only descend to the auriculo-ventricular junctional tissue, giving rise to ventricular responses, but also ascend to the sino-auricular node and interrupt the dominant rhythm. As a result, the pause which follows is not compensatory. The *P* wave is usually deformed (low, inverted or diphasic), and the *P-R* interval is shortened or lengthened. If the premature beat is very early, or if some degree of auriculo-ventricular block is present, the ventricles may not respond at

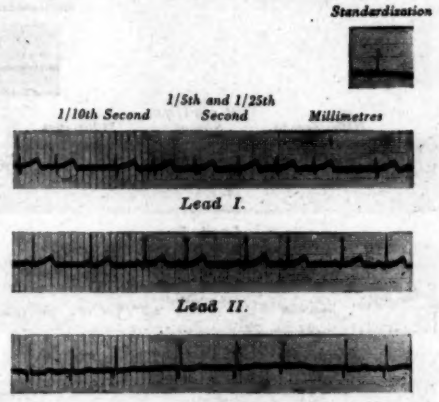

FIGURE IX.
Auricular tachycardia (short runs).

all. However, a ventricular response does generally occur and closely approximates the normal, although in some rare cases the cardiogram shows defective conduction in the bundle branches. This is more likely to occur if the premature beat is very early, and as a rule has no clinical significance.

Ventricular Premature Beats.

A premature ventricular beat may commence in either right or left ventricle, and will then spread

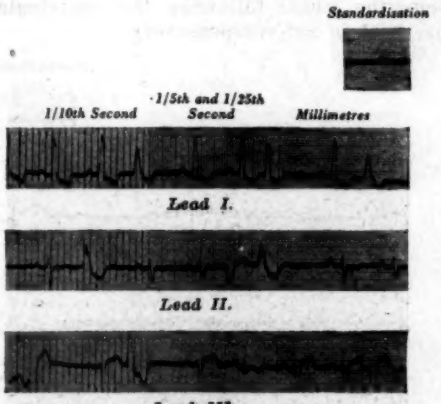

FIGURE X.
Right ventricular premature contractions.

in all directions. Occasionally it begins so late that it forms a composite contraction with the normal wave. Usually, however, the contractions are simultaneous, and the premature ventricular wave passes up to the auriculo-ventricular bundle and node, but does not continue through it into the auricles. As the auriculo-ventricular valves are shut by the contraction of the auricles, the blood passes back from the auricles into the great vessels. The dominant

rhythm of the heart is not disturbed, and premature ventricular contractions are followed by a compensatory pause. The period from the normal contraction preceding the premature beat added to the

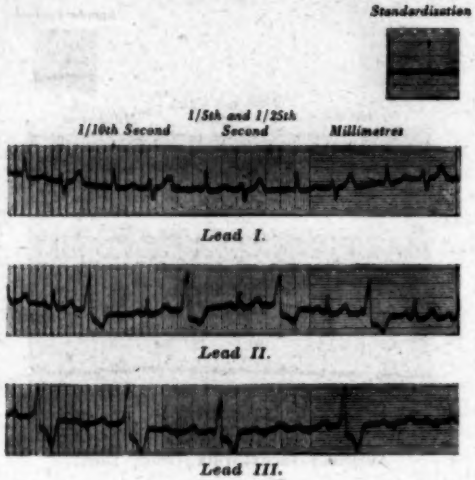

FIGURE XI.
Left ventricular premature contractions.

compensatory pause following it, is just equal to the time taken by two normal beats if sinus arrhythmia is not present. Sometimes the ventricular premature beat sends its impulse back through the auriculo-ventricular bundle to cause a retrograde auricular contraction; it does then interfere with the dominant sino-auricular rhythm in exactly the same way as an auricular premature beat. When this happens the pause following the ventricular premature beat is not compensatory.

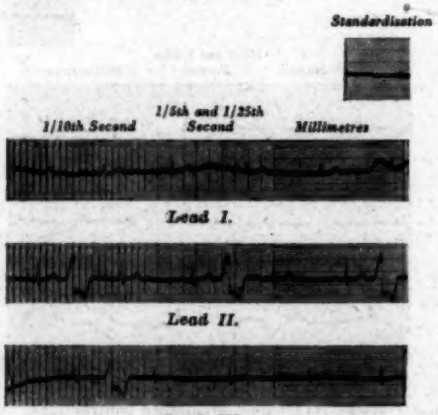

FIGURE XII.
Interpolated ventricular premature contractions.

A ventricular premature beat usually shows bizarre QRS and T waves, because the impulse spreads through an abnormal path. When it has its origin in the left ventricle, the QRS complex is wide and inverted in Lead I with a high upright T wave; when it arises in the right ventricle the QRS is wide and directed upwards in Lead I with deep inverted T. The QRS and T waves in Lead III are oppositely directed to those in Lead I.

Finally, the premature beat may occur so early, or the ventricular rate may be so slow, that the

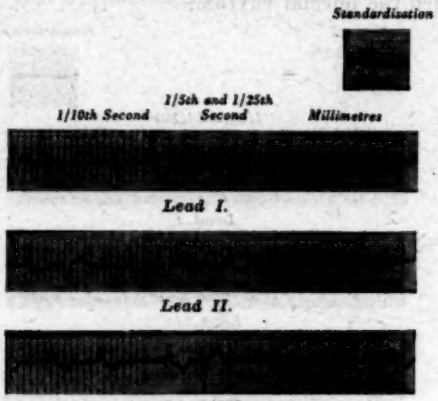

FIGURE XIII.
Auricular fibrillation and right ventricular premature contractions.

ventricular muscle is no longer refractory when the next sino-auricular impulse reaches the junctional tissue. The ventricle then responds in quick succession, and the beat is termed an interpolated ventricular premature beat.

Nodal Premature Beats.

A premature beat arising in the auriculo-ventricular node or bundle and causing simultaneous contraction of auricles and ventricles, has an effect like a ventricular premature beat with retrograde auricular contraction, and disturbs the dominant rhythm in the same way. It is a rare type.

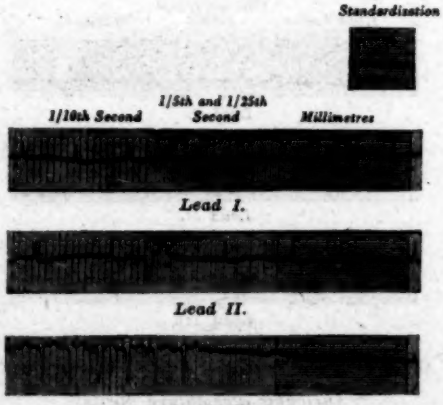

FIGURE XIV.
Premature ventricular contractions and paroxysmal ventricular tachycardia.

Parasystole.

Parasystole has recently been described by the Viennese school. It has been suggested that many forms of premature beats and paroxysmal tachycardia are due to the constant activity of a

secondary pacemaker (or pacemakers) competing with the sinus node for control of the heart.

The continuous activity of the secondary pacemaker, and the failure of the sinus impulse to

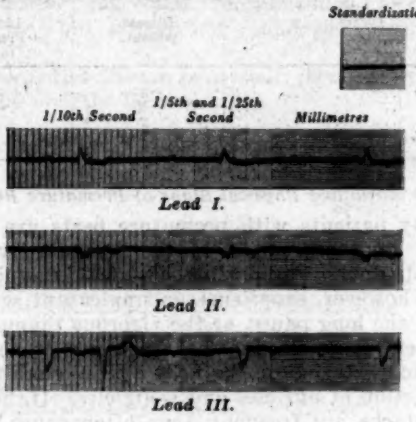

FIGURE XV.
Complete heart block, left branch bundle block, right ventricular premature contractions.

obliterate or affect it, require the existence of an entrance or protection block around the ectopic pacemaker. In some cases the inherent rate of the ectopic pacemaker is faster than the sinus rate, and this has led to the view that some of the impulses from the ectopic focus are blocked, not because the entire chamber is in the refractory phase, but because of a localized "exit block", preventing the impulse from leaving the pacemaker.

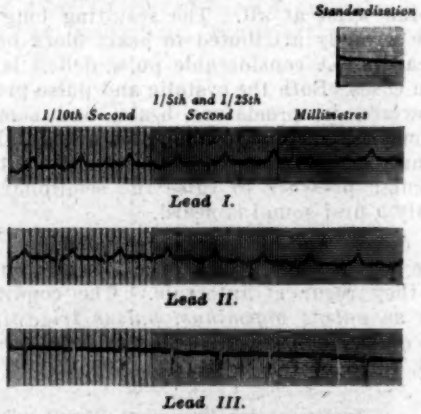

FIGURE XVI.
Nodal premature contractions.

Ætiology of Premature Beats.

Premature beats are caused by the development of abnormal stimuli in the heart muscle. They may be produced experimentally by mechanical or electrical stimulation. It is interesting to see the frequent association of disease in the upper part of the intestinal tract, such as cholecystitis with or without stones, and duodenal or gastric lesions. Thyreotoxicosis, rheumatic valvular disease and emotional disturbances may be the cause. Individual susceptibility is an important factor, as shown by the induction of premature beats in some persons, but not in others, by tobacco, tea, coffee,

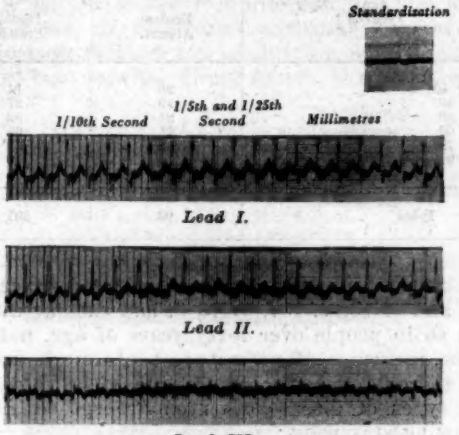

FIGURE XVII.
Nodal tachycardia.

alcohol and certain drugs. How far allergy influences this condition has not yet been determined. Organic myocardial disease sometimes appears to be the direct cause of premature beats; but many people suffering from myocardial disease do not have them, and many patients with premature beats do not have myocardial disease. I have investigated some hundreds of cases of pre-

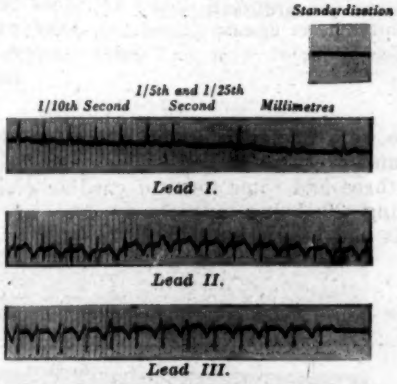

FIGURE XVIII.
Paroxysmal auricular tachycardia.

mature beats at Sydney Hospital, and although this series may not be completely representative, it is possible to come to certain conclusions. The total number of patients with ventricular premature contractions was 294. Of these, 195 were males and 99 females; cardiac disease was present in 201 and absent in 93; digitalis had been administered to 52 patients. In this series 37 patients were under forty years of age (see Table I). Fourteen of these, or 38%, had cardiac disease. Two hundred

TABLE I.

Showing the Age and Disease Incidence in a Series of Cases of Ventricular Premature Contractions.

Age. (years.)	Number.	
	Disease Absent.	Disease Present.
Under 40	23	14
40 to 49	19	27
50 to 59	24	52
60 to 69	25	89
70 to 79	2	29
80 to 90	0	10
Total	93	201

and fifty-seven patients were over forty years of age, and of these, 187, or 73%, had cardiac disease. And so in people over forty years of age, not only is the incidence of premature beats much greater, but there is twice the risk of associated disease. The types of disease observed are set out in the following statement:

Auricular fibrillation	54
Auricular flutter	2
Coronary sclerosis *plus* myocardial degeneration	101
Coronary artery thrombosis	6
Partial heart block	1
Complete heart block	4
Left branch bundle block	8
Right branch bundle block	4
Hyperpiesia	10
Aortic regurgitation (including one syphilitic)	3
Aortic incompetence	1
Mitral stenosis	3
Aortic stenosis	1
Aortic *plus* mitral stenosis	1
Rheumatic pancarditis	1
Congenital heart disease	1
Nil	93
	294

There were 72 patients with auricular premature beats, and of these 49 were males and 23 females. Thirty-three had some form of cardiac disease, the remaining 39 being apparently free of disease; digitalis had been administered to 14.

TABLE II.

Showing the Age and Disease Incidence in a Series of Cases of Auricular Premature Beats.

Age. (years.)	Number.	
	Disease Absent.	Disease Present.
Under 40	5	1
40 to 49	5	4
50 to 59	6	12
60 to 69	10	8
70 to 79	4	11
80 to 90	0	3

In the Sydney Hospital series there were 16 patients with nodal premature beats, and of these, ten were males and six females; eight had cardiac disease; none had received digitalis therapy.

TABLE III.

Showing the Age and Disease Incidence in a Series of Cases of Nodal Premature Beats.

Age. (years.)	Number.	
	Disease Absent.	Disease Present.
Under 40	3	—
40 to 49	1	—
50 to 59	2	4
60 to 70	2	4

Symptoms and Physical Signs of Premature Beats.

Many patients with premature beats are unconscious of their presence, the irregularity being noticed during a routine physical examination. Some, however, experience an unpleasant sensation due to the long pause, or the vigorous thump of the first beat following it, or the pressure wave forced up into the veins of the neck by the simultaneous contraction of auricles and ventricles. If, however, the attacks are frequent, they often cause no discomfort and may even pass unnoticed. Occasionally, in nervous subjects, pain is actually felt with each abnormal contraction, and the physician may be led to diagnose *angina pectoris*. Dizziness or faintness may result when they occur very frequently.

The premature beats may be felt in the pulse, heard in the precordium, or noted in graphic records. The radial pulse is not a satisfactory place to detect the abnormal beat, for two reasons. A weak beat travels more slowly than a stronger one and the irregularity may not be noted at the wrist. If the beat is very early and weak, it may not reach the wrist at all. The resulting long pause may be wrongly attributed to heart block or sinus bradycardia. A considerable pulse deficit is found in such cases. Both the systolic and pulse pressures are lowered in premature beats, and sometimes there may be no measurable pressure at all. In very early contractions there is not sufficient intraventricular pressure to raise the semilunar cusps and only a first sound is heard.

The course and prognosis are variable. There may be only a short attack in a lifetime; but more often they recur at intervals. The condition is known as *pulsus bigeminus, pulsus trigeminus* or *pulsus quadrigeminus,* according as it follows every second, third or fourth beat.

Treatment for Premature Beats.

If there is no evidence of disease, reassurance will relieve the patient of his fear, and he will be less conscious of his symptoms. If digitalis is being administered and coupled beats occur, it should be immediately suspended, as this indicates that about 75% of the lethal dose has been given. Smoking must be stopped if it appears to be a factor, and all efforts made to remove emotional stress or undue fatigue. Gall-bladder disease should be treated surgically and any digestive disturbance rectified.

Quinidine sulphate, in doses of 0·18 gramme (three grains) two or three times a day, is sometimes effective in checking premature beats. Bromide, bromide and "Luminal", or digitalis in small doses, has been recommended by some authorities; but I have not found the latter very successful.

If myocardial disease is present, physical exercise should be strictly limited.

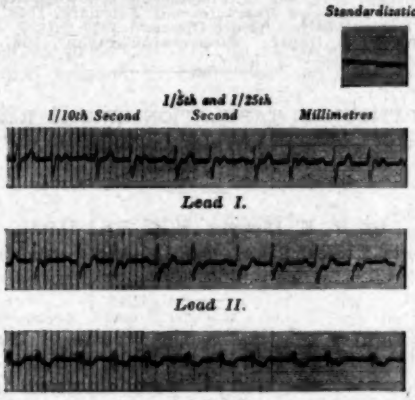

FIGURE XIX.
Partial heart block with dropped beats.

Differential Diagnosis of Premature Beats.

The occurrence of an early contraction followed by a long pause is usually sufficient to establish the diagnosis. Exercise generally abolishes the irregularity, and in this way will distinguish it from the grosser forms of cardiac arrhythmia, such as auricular fibrillation. Sinus arrhythmia varies

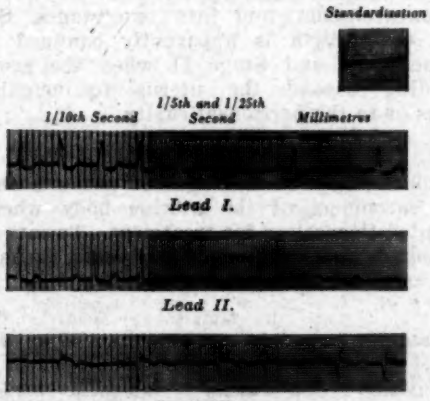

FIGURE XX.
Partial heart block with dropped beats.

with respiration, and in heart block the rate is usually slower. *Pulsus alternans* may be confused with *pulsus bigeminus*, because in both cases the systolic pressure of the abnormal contractions is lowered. Auscultation at the apex will immediately differentiate between them, as *pulsus alternans* has a regular cardiac rhythm.

Heart Block.

Any defect in auriculo-ventricular conduction, short of complete dissociation, is called partial heart block. Simple delay in conduction results in a prolongation of the *P-R* interval. In the more severe cases an occasional auricular contraction fails to pass through the conducting bundle, and a dropped beat results. Every fourth, third or second

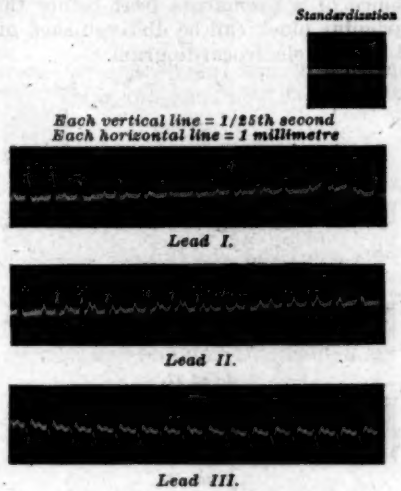

FIGURE XXIA.
Auricular tachycardia; partial heart block, with dropped beats.

auricular impulse may be blocked, or there may be two, three or four auricular contractions to every ventricular beat. As a rule, however, the pacemaker of the auriculo-ventricular node escapes if the block is greater than 2:1, and complete block is established.

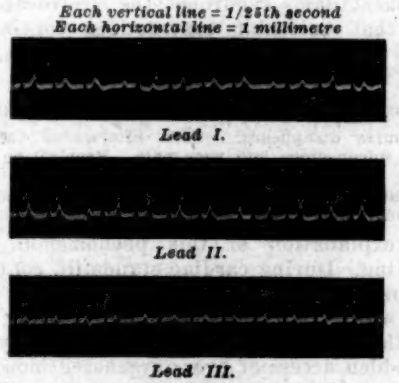

FIGURE XXIB.
Auricular tachycardia; partial heart block, with dropped beats.

In complete heart block and simple delay in conduction the rhythm is usually regular. When dropped beats occur the rhythm is irregular, but the irregularity usually takes place at regular intervals. Heart block may result temporarily from the administration of digitalis or quinidine, vagal

stimulation and infectious diseases, such as acute rheumatism and diphtheria. Permanent or organic heart block is usually the result of coronary artery disease and less commonly syphilis, rheumatism, bacterial endocarditis or congenital abnormality.

Dropped beats may be confused with the compensatory pause which follows a premature contraction; but the distinction is readily made by the absence of a premature beat before the pause. Sino-auricular block can be distinguished only with the aid of the electrocardiogram.

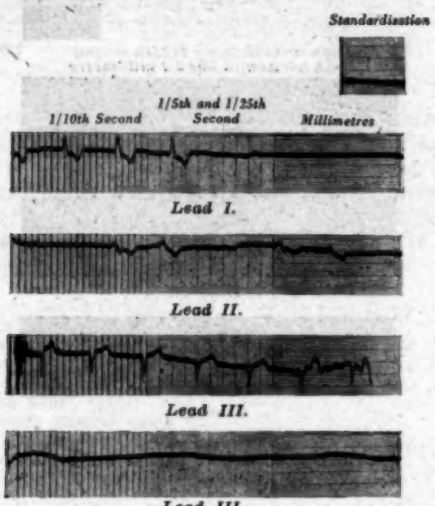

FIGURE XXII.
Ventricular standstill.

Ventricular standstill is another type of irregularity due to disturbances of conduction. In this, the Stokes-Adams syndrome, the electrocardiogram shows that auricular contractions continue, but there is complete standstill of the ventricles, lasting from a few seconds to three minutes.

Clinically the sequence of events is as follows:

The pulse disappears. Soon afterwards the patient becomes unconscious and very pale. Respiration becomes frequent and deep. After a varying interval the pulse returns and respirations cease. The face becomes flushed, clonic convulsions begin and usually last for some seconds.

The explanation of this phenomenon is very interesting. During cardiac standstill, continuance of respiration hyperventilates the blood in the lungs, which is transported, on recovery of the heart, throughout the body and respiratory centre. This sudden access of over-oxygenated blood to the brain depresses the respiratory centre and gives rise to apnœa. The increased alkalinity of the brain resulting from the excess of oxygen and diminution of carbon dioxide causes the clonic convulsions.

Summary.

In this lecture I have endeavoured to trace the course of cardiac irregularities from the sinus node onwards, omitting the regular arrhythmias, such as paroxysmal tachycardia. Arising in the auricles or ventricles, they are frequently associated with organic disease; sinus node arrhythmias have not quite the same significance.

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A STATISTICAL TABULATION OF THE RESULTS OF TREATMENT OF CARCINOMA OF THE UTERUS.

By H. E. DOWNES, M.B., B.S., D.P.H.,
Senior Medical Officer, Commonwealth Department of Health.

THE figures relating to the results of treatment, undertaken prior to June 30, 1934, of 1,861 cases of carcinoma of the uterus, were obtained from all capital cities of Australia, together with Newcastle and Launceston, and include the results of treatment at thirteen large hospitals. These hospitals have a uniform system for recording cases of cancer and a follow-up system which has recorded the end-results of treatment in 81·6% of this series of cases, so that the figures are reliable.

Carcinoma of the Uterine Body.

Carcinoma of the uterine body has been subdivided into two pathological types, adenocarcinoma and chorioncarcinoma, and into two stages, Stage I when the growth is apparently confined to the uterine body, and Stage II when the growth is spreading beyond the uterus to neighbouring organs or to the peritoneal cavity.

Age Incidence.

Table I indicates the ages of patients suffering from carcinoma of the uterine body when they presented themselves for treatment. Twenty-six *per centum* are under the age of fifty years, the majority being over the child-bearing age.

TABLE I.
Carcinoma of the Uterine Body: Age at which Treatment was Commenced.

Age Group. (Years.)	Number of Patients.	Percentage in Age Group.	Total Percentage.
Under 25	2	1·0	
25 to 29	8	3·8	26
30 to 34	19	9·1	
35 to 39	25	12·4	
40 to 44	33	15·9	
45 to 49	55	26·4	
50 to 54	34	16·3	
55 to 59	19	9·1	74
60 to 64	9	4·3	
65 to 69	3	1·4	
70 to 74	1	0·5	
75 and over			
Not stated			

Relationship to Child Bearing.

In Table II are set out the groups of patients with carcinoma of the uterine body without children, and with one, two, three and four or more children. Approximately 27% of the patients were childless, and 33% had had four or more children.

Chorioncarcinoma of the Uterine Body.

There were seven patients with chorioncarcinoma (all confirmed histologically), the four patients in Stage I being treated by hysterectomy. Of these, one, treated prior to 1927, is alive without recurrence; one, treated in 1932, died without evidence of recurrence or metastases; and there is no information concerning the remaining two. Of the three

TABLE II.

Carcinoma of Uterine Body: Correlation with Child Bearing.

Number of Children.	Number of Patients.	Percentage of Each Group.
No children	47	27·2
Children, number unspecified	4	2·3
One child	21	12·1
Two children	16	9·2
Three children	28	16·2
Four or more children	57	32·9
Total one or more children	126	72·8

TABLE III.

Adenocarcinoma of Uterine Body (Stage I): Position at June 30, 1937, of Patients Treated Prior to June 30, 1934.

	Method of Treatment.	Total Patients.	Lesion Histologically Confirmed.	Number of Patients Alive without Recurrence.	Percentage of Patients Alive without Recurrence.	Number of Patients Alive with Recurrence.	Number Dead.	No Information.
Radiological methods	Radium only	40	32	12	30·0	2	16	10
	Deep X rays only	1	—	—	Nil.	—	1	—
	Radium and X rays	9	7	2	28·5	—	5	2
	Irradiation	50	39	14	28·0	2	22	12
Surgical methods	Surgery with hysterectomy	44	40	13	29·5	—	11	20
Combined methods	Radium *plus* surgery	22	22	11	50·0	—	1	10
	Surgery *plus* X rays	25	15	8	32·0	—	7	10
	Surgery *plus* X rays *plus* radium	14	10	7	50·0	—	3	4
	Surgery and irradiation	61	47	26	42·6	—	11	24
	All methods of treatment	155	124	53	34·2	2	44	56

TABLE IV.

Adenocarcinoma of the Uterine Body, Stage I: Survival Rates from Ten to Four Years.

	Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
		Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radiological methods.	Radium only	—	—	—	—	4	1 (25·0%)	12	4 (33·3%)	20	7 (35·0%)	24	10 (41·7%)	34	11 (32·4%)
	Deep X rays	—	—	—	—	—	—	—	—	—	—	—	—	—	—
	Radium and X rays.	—	—	—	—	—	—	2	Nil.	4	Nil.	5	Nil.	9	2 (22·2%)
	Irradiation (Total)	—	—	—	—	4	1 (25·0%)	14	4 (28·6%)	24	7 (29·2%)	29	10 (34·5%)	43	13 (30·2%)
Surgical methods.	Surgery with hysterectomy	4	Nil.	6	Nil.	14	3 (21·4%)	16	3 (18·7%)	23	5 (21·7%)	30	8 (26·7%)	38	10 (26·3%)
	Surgery without hysterectomy	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Combined methods.	Radium *plus* surgery.	1	Nil.	1	Nil.	1	Nil.	1	Nil.	6	3 (50·0%)	12	5 (41·7%)	16	7 (43·7%)
	Surgery *plus* X rays.	—	—	—	—	—	—	3	2 (66·7%)	7	3 (42·8%)	8	3 (37·5%)	12	4 (33·3%)
	Surgery *plus* X rays *plus* radium.	—	—	—	—	—	—	—	—	3	1 (33·3%)	5	1 (20·0%)	10	4 (40·0%)
	Total surgery and irradiation	1	Nil.	1	Nil.	1	Nil.	4	2 (50%)	16	7 (42·7%)	25	9 (36%)	38	15 (39·5%)
	Total	5	Nil.	7	Nil.	19	4 (21·1%)	34	9 (26·5%)	63	19 (30·2%)	84	27 (32·1%)	119	33 (31·9%)

patients in Stage II, one, treated in 1933 by X rays and hysterectomy, is alive without recurrence; one, treated by hysterectomy, died without improvement; and one, treated by radium and hysterectomy, died of metastases.

Adenocarcinoma of the Uterine Body.

There were 221 patients with carcinoma of the uterine body treated prior to June 30, 1934, 155 of these being in Stage I and 66 being in Stage II. Table III gives the results of the various modes of treatment in the Stage I cases. In 80% of these 155 cases the lesion was confirmed histologically. The modes of treatment giving the highest survival rate without recurrence (50%) were surgery *plus* radium, and surgery *plus* radium *plus* deep X rays. This may be regarded as a survival rate of three or more years. Table IV gives survival rates of ten or more years, nine, eight, seven, six, five and four or more years in this group.

Table V shows the results of treatment in the 66 Stage II cases of adenocarcinoma of the uterine body, 68·2% of which were confirmed histologically. Again, the mode of treatment giving the highest survival rate without recurrence was the combined method of surgery and radiology, and this is confirmed in Table VI.

TABLE V.

Adenocarcinoma of Uterine Body (Stage II): Position at June 30, 1937, of Patients Treated Prior to June 30, 1934.

	Method of Treatment.	Total Patients.	Nature of Lesion Histologically Confirmed.	Number of Patients Alive without Recurrence.	Percentage of Patients Alive without Recurrence.	Number of Patients Alive with Recurrence.	Number Dead.	No Information.
Radiological methods	Radium only	9	6	Nil.	—	—	8	1
	Deep X rays only	6	3	Nil.	—	—	5	1
	Radium and X rays	8	5	1	12·5	1	6	—
	Irradiation	23	14	1	4·3	1	19	2
Surgical methods	Surgery with hysterectomy	14	13	2	14·3	—	9	3
	Surgery without hysterectomy	1	Nil.	Nil.	—	—	—	1
	Total surgery	15	13	2	13·3	—	9	4
Combined methods	Radium and surgery	7	5	1	14·3	—	3	3
	Surgery and X rays	15	9	2	13·3	—	10	3
	Radium, surgery and X rays	6	4	1	16·7	1	4	—
	Surgery and radiology	28	18	4	14·3	1	17	6
	All methods of treatment	66	45	7	10·6	2	45	12

TABLE VI.

Adenocarcinoma of Uterine Body, Stage II: Survival Rates from Ten to Four Years.

	Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
		Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radiological methods.	Radium only	—	—	—	—	2	—	2	—	4	—	5	—	6	—
	Deep X rays	—	—	—	—	—	—	3	—	4	—	4	—	6	—
	Radium and X rays.	—	—	—	—	2	—	2	—	5	—	5	—	6	—
	Irradiation (Total)	—	—	—	—	4	—	7	—	13	—	14	—	18	—
Surgical methods.	Surgery with hysterectomy.	—	—	4	—	4	—	6	1 (16·7%)	7	1 (14·3%)	11	1 (9·1%)	13	2 (15·4%)
	Surgery without hysterectomy.	—	—	—	—	—	—	—	—	—	—	—	—	1	—
	Combined surgery.	—	—	4	—	4	—	6	1 (16·7%)	7	1 (14·3%)	11	1 (9·1%)	14	2 (14·3%)
Combined methods.	Radium and surgery.	—	—	—	—	—	—	—	—	1	—	2	—	3	—
	Surgery and X rays.	—	—	—	—	1	—	2	—	4	1 (25·0%)	5	1 (20·0%)	11	2 (18·2%)
	Radium, surgery and X rays.	—	—	—	—	—	—	2	1 (50·0%)	4	1 (25·0%)	4	1 (25·0%)	5	1 (20·0%)
	Total surgery and irradiation	—	—	—	—	1	—	4	1 (25·0%)	9	2 (22·2%)	11	2 (18·2%)	19	3 (15·8%)
	Total ..	—	—	4	—	9	—	17	2 (11·8%)	29	3 (10·3%)	36	3 (8·3%)	51	5 (9·8%)

Carcinoma of the Cervix Uteri.

Age Incidence.

Table VII shows the ages at which treatment was commenced for all types of carcinoma of the *cervix uteri*, indicating that in 48% of cases it occurred under the age of fifty years.

TABLE VII.

Carcinoma of the Cervix Uteri: Age at which Treatment was Commenced.

Age Group (Years).	Number of Patients.	Percentage in Each Age Group.	Total Percentage.
Under 25	4	0·3	
25 to 29	250	16·6	48·1
30 to 34	223	14·8	
35 to 39	250	16·6	
40 to 44	230	15·2	
45 to 49	210	13·9	
50 to 54	163	10·8	
55 to 59	96	6·4	51·9
60 to 64	59	3·9	
65 to 69	23	1·5	
70 to 74	2	0·1	
75 and over			
No record			

Relationship to Child Bearing.

In Table VIII are set out the groups of patients with carcinoma of the *cervix uteri* without children, and with one, two, three and four or more children. Approximately 10% were childless, 45% had had four or more children, and 89% had had children.

TABLE VIII.

Carcinoma of the Cervix Uteri: Correlation with Child Bearing.

Number of Children.	Number of Patients.	Percentage in Each Group.
No children	132	10·6
Children, number unspecified	80	6·4
One child	164	13·2
Two children	161	13·0
Three children	145	11·7
Four or more children	561	45·1
Total one or more children	1,111	89·4

Relationship of Cervical Lacerations to Carcinoma of the Cervix Uteri.

Of 657 patients treated for carcinoma of the *cervix uteri*, 37 gave a history of cervical laceration, 522 gave a history of no laceration, and there was no information in respect of 98 patients.

Stage of Disease of Carcinoma of the Cervix Uteri of Patients First Presenting Themselves for Treatment.

The international definition of the four stages of the disease recommended by the Cancer Commission of the Health Committee, League of Nations, was used in this classification. These are shown in the following tabulation:

Stage I: The growth is strictly limited to the *cervix uteri*; the uterus is mobile.

Stage II: The lesion is spreading into one or more fornices, with or without infiltration of the parametrium adjacent to the uterus, the uterus retaining some degree of mobility.

Stage III: (*a*) Nodular infiltration of the parametria on one or both sides has occurred, extending to the wall of the pelvis, with limited mobility of the uterus, or massive infiltration of one parametrium with fixation of the uterus; (*b*) more or less superficial infiltration of a large part of the vagina has occurred, the uterus being mobile; (*c*) isolated metastases are present in the pelvic glands, the primary growth being relatively small; (*d*) isolated metastases are present in the lower part of the vagina. (Generally speaking, all patients not classified in Stage II or IV will be placed in Stage III.)

Stage IV: (*a*) Massive infiltration of both parametria extending to the walls of the pelvis has occurred; (*b*) the carcinoma involves the bladder or rectum; (*c*) the whole vagina is infiltrated, the vaginal passage being rigid, or one vaginal wall is infiltrated along its whole length, with fixation of the primary growth; (*d*) remote metastases have occurred.

The total number of patients with carcinoma of the cervix treated was 1,633, 351 or 21·5% being in Stage I, 411 or 25·2% being in Stage II, 570 or 34·9% being in Stage III, and 301 or 18·4% being in Stage IV. Of these, 981 or 60·1% were histologically confirmed.

TABLE IX.

Results of Treatment of all Types of Carcinoma of the Cervix Uteri.

Mode of Treatment.	Stage I.			Stage II.			Stage III.			Stage IV.			All Stages.		
	Number of Patients Treated Prior to June 30, 1934.	Number of Patients Alive without Recurrence in 1937.	Percentage Survival.	Number of Patients Treated Prior to June 30, 1934.	Number of Patients Alive without Recurrence in 1937.	Percentage Survival.	Number of Patients Treated Prior to June 30, 1934.	Number of Patients Alive without Recurrence in 1937.	Percentage Survival.	Number of Patients Treated Prior to June 30, 1934.	Number of Patients Alive without Recurrence in 1937.	Percentage Survival.	Number of Patients Treated Prior to June 30, 1934.	Number of Patients Alive without Recurrence in 1937.	Percentage Survival.
Radium only	130	44	33·8	143	26	18·2	264	23	8·7	190	3	1·6	727	96	13·2
Deep X rays only	17	2	11·8	8	Nil.	Nil.	11	Nil.	Nil.	17	Nil.	Nil.	53	2	3·8
Radium and X rays	92	31	33·7	111	24	21·6	182	42	23·1	62	1	1·6	447	98	21·9
Irradiation	230	77	32·2	262	50	19·1	457	65	14·2	269	4	1·5	1,227	196	16·0
Surgery	30	12	40·0	43	10	23·3	39	3	7·7	16	Nil.	Nil.	128	25	19·5
Combined surgery and irradiation	82	46	56·1	106	41	38·7	74	17	23·0	16	1	6·3	278	105	37·8
Radium and surgery	39	25	64·1	60	26	37·7	48	10	20·8	9	Nil.	Nil.	165	61	37·0
Surgery and X rays	18	6	33·3	16	7	43·7	6	Nil.	Nil.	5	Nil.	Nil.	45	13	28·7
Radium, surgery and X rays	25	15	60·0	21	8	38·1	20	7	35·0	2	1	50·0	68	31	45·6
Total	351	135	38·5	411	101	24·6	570	85	14·9	301	5	1·7	1,633	326	20·0

Pathological Types of Carcinoma of the Cervix Uteri.

Of the 1,633 patients treated, 1,361 or 83·3% had squamous-celled carcinomata, 153 or 9·4% had the columnar-celled type, and 119 or 7·3% were unclassified.

Results of Treatment of all Types of Carcinoma of the Cervix Uteri.

Table IX indicates the numbers of patients subdivided into the various stages of the disease treated in various ways prior to June 30, 1934, and the numbers surviving on June 30, 1937, with the percentage of survivals. A majority of the patients were treated by radiological methods. It would appear that combined methods of surgery and radiology have been most efficacious in treatment, although the figures are too small for certainty in such conclusions.

Table X is subdivided to show the survivals from the four stages of the disease, ten or more years, nine, eight, seven, six, five and four or more years after treatment.

TABLE Xa.

Carcinoma of the Cervix Uteri, Stage I: Survival Rates from Ten to Four Years.

Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
	Number of Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radium only	Nil.	—	4	1 (25·0%)	14	3 (21·4%)	31	7 (22·6%)	65	24 (36·9%)	81	28 (34·6%)	114	41 (35·9%)
Deep X rays	Nil.	—	Nil.	—	Nil.	—	Nil.	—	3	1 (33·3%)	10	2 (20·0%)	16	2 (12·5%)
Radium and X rays	Nil.	—	Nil.	—	6	2 (33·3%)	17	4 (23·5%)	33	6 (18·2%)	58	17 (29·3%)	77	23 (29·9%)
Irradiation (Total)	Nil.	—	4	1 (25·0%)	20	5 (25·0%)	48	11 (22·9%)	101	31 (30·7%)	149	47 (31·5%)	209	66 (31·6%)
Surgery	6	Nil.	12	4 (33·3%)	14	5 (35·7%)	17	6 (35·3%)	19	7 (36·8%)	24	10 (41·7%)	26	10 (38·5%)
Combined surgery and radiology	Nil.	—	Nil.	—	5	4 (80·0%)	18	12 (66·7%)	28	15 (53·6%)	46	26 (56·5%)	65	36 (55·4%)
Radium and surgery	Nil.	—	Nil.	—	4	3 (75·0%)	9	7 (77·8%)	15	10 (66·7%)	22	16 (72·7%)	32	21 (65·6%)
Surgery and X rays	Nil.	—	Nil.	—	1	1 (100%)	4	2 (50·0%)	7	2 (28·6%)	12	4 (33·3%)	15	5 (33·3%)
Surgery, radium and X rays	Nil.	—	Nil.	—	Nil.	—	5	3 (60·0%)	6	3 (50·0%)	12	6 (50·0%)	18	10 (55·5%)
Total	6	Nil.	16	5 (31·3%)	39	14 (35·9%)	83	29 (34·9%)	148	53 (35·8%)	219	83 (37·9%)	291	112 (38·5%)

TABLE Xb.

Carcinoma of the Cervix Uteri, Stage II: Survival Rates from Ten to Four Years.

Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
	Number of Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radium only	2	1 (50·0%)	4	1 (25·0%)	20	3 (15·0%)	44	9 (20·5%)	66	14 (22·2%)	94	18 (19·1%)	121	23 (19·0%)
Deep X rays	Nil.	—	Nil.	—	Nil.	—	3	Nil.	4	—	4	—	4	—
Radium and X rays	Nil.	—	Nil.	—	8	—	17	2 (11·8%)	32	5 (15·6%)	53	8 (15·1%)	75	11 (14·7%)
Irradiation (Total)	2	1 (50·0%)	4	1 (25·0%)	28	3 (10·7%)	64	11 (17·2%)	102	19 (18·6%)	151	26 (17·2%)	200	34 (17·0%)
Surgery	12	4 (33·3%)	16	5 (31·3%)	23	5 (21·7%)	24	6 (25·0%)	30	7 (23·3%)	37	9 (24·3%)	40	10 (25·0%)
Combined surgery and radiology	Nil.	—	2	Nil.	15	3 (20·0%)	33	5 (15·2%)	50	11 (22·0%)	76	26 (34·2%)	98	37 (37·8%)
Radium and surgery	Nil.	—	2	—	7	1 (14·3%)	13	1 (7·7%)	24	5 (20·8%)	47	16 (34·0%)	65	25 (38·5%)
Surgery and X rays	Nil.	—	Nil.	—	4	1 (25·0%)	7	2 (28·6%)	8	3 (37·35%)	14	7 (50·0%)	15	7 (46·7%)
Radium, surgery and X rays	Nil.	—	Nil.	—	4	1 (25·0%)	13	2 (15·4%)	14	— (21·4%)	15	3 (20·0%)	18	5 (27·8%)
Total	14	5 (35·7%)	20	6 (30·0%)	66	11 (16·7%)	121	22 (18·2%)	182	37 (20·3%)	264	61 (23·1%)	338	81 (23·9%)

TABLE Xc.

Carcinoma of the Cervix Uteri, Stage III: Survival Rates from Ten to Four Years.

Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
	Number of Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radium only ..	Nil.	—	3	1 (33·3%)	28	2 (7·1%)	68	7 (10·3%)	121	10 (8·3%)	167	15 (9·0%)	211	18 (8·5%)
Deep X rays ..	Nil.	—	Nil.	—	1	Nil.	1	Nil.	2	Nil.	4	Nil.	7	Nil.
Radium and X rays ..	Nil.	—	1	1 (100%)	13	1 (7·7%)	41	6 (14·6%)	57	6 (10·5%)	98	17 (17·3%)	134	24 (17·9%)
Irradiation ..	Nil.	—	4	2 (50·0%)	42	3 (7·1%)	110	13 (11·8%)	180	16 (8·9%)	269	32 (11·9%)	352	42 (11·9%)
Surgery	6	1 (16·7%)	9	1 (11·1%)	16	2 (12·5%)	20	2 (10·0%)	25	2 (8·0%)	31	3 (9·7%)	37	3 (8·1%)
Combined surgery and irradiation ..	Nil.	—	2	Nil.	11	2 (18·2%)	20	4 (20·0%)	27	7 (25·9%)	38	9 (23·7%)	55	14 (25·5%)
Radium and surgery	Nil.	—	1	Nil.	8	1 (12·5%)	15	3 (20·0%)	20	4 (20·0%)	29	6 (20·7%)	39	9 (23·1%)
Surgery and X rays ..	Nil.	—	1	Nil.	2	Nil.	3	Nil.	3	Nil.	3	Nil.	5	Nil.
Radium and surgery and X rays ..	Nil.	—	Nil.	—	1	1 (100%)	2	1 (50·0%)	4	3 (75·0%)	6	3 (50·0%)	11	5 (45·5%)
Total	6	1 (16·7%)	24	5 (20·8%)	78	9 (11·5%)	157	22 (14·0%)	243	27 (11·1%)	338	44 (13·0%)	444	59 (13·3%)

TABLE Xd.

Carcinoma of the Cervix Uteri, Stage IV: Survival Rates from Ten to Four Years.

Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
	Number of Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radium only ..	2	Nil.	5	Nil.	17	Nil.	58	2 (3·4%)	96	2 (2·1%)	139	2 (1·4%)	169	2 (1·2%)
Deep X rays ..	Nil.	—	Nil.	—	2	Nil.	2	Nil.	3	Nil.	5	Nil.	10	Nil.
Radium and X rays ..	Nil.	—	2	Nil.	9	Nil.	16	Nil.	20	Nil.	35	Nil.	46	Nil.
Irradiation ..	2	Nil.	7	Nil.	28	Nil.	76	2 (2·6%)	119	2 (1·7%)	179	2 (1·1%)	225	2 (0·9%)
Surgery	4	Nil.	8	Nil.	9	Nil.	10	Nil.	11	Nil.	11	Nil.	14	Nil.
Combined surgery and radiology	Nil.	—	3	Nil.	4	Nil.	6	Nil.	9	1 (11·1%)	11	1 (9·1%)	14	1 (7·1%)
Radium and surgery	Nil.	—	1	Nil.	2	Nil.	3	Nil.	5	Nil.	6	Nil.	8	Nil.
Surgery and X rays ..	Nil.	—	2	Nil.	2	Nil.	3	Nil.	3	Nil.	4	Nil.	5	Nil.
Radium, surgery and X rays	Nil.	—	Nil.	—	Nil.	—	Nil.	—	1	1 (100%)	1	1 (100%)	1	1 (100%)
Total	6	Nil.	18	Nil.	31	Nil.	92	2 (2·2%)	189	3 (2·2%)	201	3 (1·5%)	253	3 (1·2%)

If it is remembered that over half of these patients were over fifty years of age, it is not surprising that of the 1,633 treated, 64 or 3·3% died of other causes without evidence of local recurrences or metastases. Further, 270 patients, or 16·5% of the total, had their primary lesion healed, but died of metastases.

Summary.

1. The tabulation is in respect of 1,861 cases of carcinoma of the uterus, of which 62·2% were confirmed histologically.

2. Of the patients with carcinoma of the uterine body, 26%, and of the patients with carcinoma of the *cervix uteri*, 48% were under fifty years of age.

3. The percentages of patients with carcinoma of the uterine body and of the patients with carcinoma of the *cervix uteri* who were childless, were respectively 27 and 10·6.

4. In Stage I 32·1% and in Stage II 8·3% of the patients with adenocarcinoma of the uterine body treated five years and more ago are alive without recurrence. Combined radiological and surgical methods of treatment proved most efficacious.

TABLE XE.

Carcinoma of the Cervix Uteri, Stages I to IV: Survival Rates from Ten to Four Years.

Method of Treatment.	Ten Years and More.		Nine Years and More.		Eight Years and More.		Seven Years and More.		Six Years and More.		Five Years and More.		Four Years and More.	
	Number of Patients Treated Prior to June 30, 1927.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1928.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1929.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1930.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1931.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1932.	Number and Percentage Alive without Recurrence.	Number of Patients Treated Prior to June 30, 1933.	Number and Percentage Alive without Recurrence.
Radium only ..	4	1 (25·0%)	16	3 (18·8%)	79	8 (10·1%)	201	25 (12·4%)	348	50 (14·4%)	481	63 (13·1%)	615	84 (13·7%)
Deep X rays	Nil.	—	Nil.	—	3	Nil.	6	Nil.	12	1 (8·3%)	23	2 (8·7%)	37	2 (5·4%)
Radium and X rays ..	Nil.	—	3	1 (33·3%)	36	3 (8·3%)	91	12 (13·2%)	142	17 (12·0%)	244	42 (17·2%)	332	58 (17·5%)
Irradiation	4	1 (25·0%)	19	4 (21·1%)	118	11 (9·3%)	298	37 (12·4%)	502	68 (13·5%)	748	107 (14·3%)	984	144 (14·5%)
Surgery	28	5 (17·9%)	45	10 (22·2%)	62	12 (19·4%)	71	14 (19·7%)	85	16 (18·8%)	103	22 (21·4%)	117	23 (19·6%)
Combined surgery and radiology	Nil.	—	7	Nil.	35	9 (25·7%)	77	21 (27·3%)	110	34 (30·9%)	171	62 (36·8%)	232	88 (37·9%)
Radium and surgery	Nil.	—	4	Nil.	21	5 (23·8%)	40	11 (27·5%)	64	19 (29·7%)	104	38 (36·5%)	144	55 (38·2%)
Surgery and X rays ..	Nil.	—	3	Nil.	9	2 (22·2%)	17	4 (23·5%)	21	5 (23·8%)	33	11 (33·3%)	40	12 (30·0%)
Radium, surgery and X rays	Nil.	—	Nil.	—	5	2 (40·0%)	20	6 (30·0%)	25	10 (40·0%)	34	13 (38·2%)	48	21 (43·8%)
Total	32	6 (18·8%)	71	14 (19·7%)	215	32 (14·9%)	446	72 (16·1%)	697	118 (16·9%)	1,022	191 (18·7%)	1,333	255 (19·1%)

5. In Stage I 37·9%, in Stage II 23·1%, in Stage III 13%, and in Stage IV 1·5% of the patients with carcinoma of the cervix treated five years and more ago are alive without recurrence. Combined radiological and surgical treatment again proved most efficacious.

PRELIMINARY NOTE ON THE *M*, *N* AND *MN* BLOOD GROUPINGS.

By BURTON BRADLEY, M.B. (Sydney), D.P.H. (London), *Sydney.*

WHEN Landsteiner and Levine,[1] in 1928, described the agglutinogens *M* and *N* and their combination *MN*, they gave us three new blood groups quite independent of the *AB*, *A*, *B* and *O* system.

As there are no natural agglutinins in human serum to these haptans *M* and *N*, sera have to be prepared by the immunization of rabbits with *OM* and *ON* corpuscles. The preparation of the final serum is complicated and need not be detailed here. The process is fully outlined by Thomas.[2]

The practical point is that the utilization of the *MN* system, in association with the *A*, *B* and *O* system, enables us to separate human blood into the following groups:

1. *AB–M*
2. *AB–N*
3. *AB–MN*
4. *A–M*
5. *A–N*
6. *A–MN*
7. *B–N*
8. *B–N*
9. *B–MN*
10. *O–M*
11. *O–N*
12. *O–MN*

Thus the establishment, for instance, of non-paternity is materially increased, as is also the chance of declaring an accused person not guilty of murder, rape and similar charges.

Through the kind cooperation of Dr. McGrath, of Dublin, Eire, I have had supplies of the special sera sent out by air. In its purified condition the serum has a short life; but I was fortunately able to receive one batch here in active condition, and with it to group a number of persons whose international *A B O* groups I also tested.

With the small supply of serum that has so far arrived in working condition I have been able to test only 29 persons.

In all but one case the positive reactions, observed by the slide method, equal drops of cell suspension and prepared serum (1 in 10 dilution) being used, were definite and clear-cut, and showed up within a minute or so.

Partial reactions may occur later, after a quarter of an hour or so, but appear to be definitely non-specific. The positive reactions to tests are quite distinct.

Table I shows the *M*, *N* and *MN* distribution in international groups *A*, *B* and *O*. I was not able to test any *AB* group.

TABLE I.

Showing the Relation between International Groups and the MN Groups in 29 Cases.

International Group.	Number in Group *M*.	Number in Group *N*.	Number in Group *MN*.	Total.
A	4	3	3	10
B	1	0	3	4
O	5	5	5	15
Total	10	8	11	29

From the typed *OM* and *ON* persons, and through their good nature, I am now in the process of preparing *M* and *N* antisera.

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K. Landsteiner and P. Levine: "On Individual Differences in Human Blood", *The Journal of Experimental Medicine*, Volume XLVII, May, 1928, page 757.

Idem: "On Inheritance of Agglutinogens of Human Blood Demonstrable by Immune Agglutinins", *The Journal of Experimental Medicine*, Volume XLVIII, November, 1928, page 731.

Reports of Cases.

RESPIRATORY PARALYSIS DUE TO DIPHTHERIA SUCCESSFULLY TREATED BY MEANS OF THE RESPIRATOR.

By D. G. HAMILTON, M.B., B.S.,

Medical Registrar, The Royal Alexandra Hospital for Children, Sydney.

SINCE respirators were installed at the Royal Alexandra Hospital for Children, Sydney, in preparation for the recent epidemic of poliomyelitis, three patients with severe post-diphtheritic paralysis involving the respiratory muscles have been treated in the hospital. Undoubtedly all three lives would have been lost without respirator treatment, but all three patients have survived.

Clinical Records.

CASE I.—M.H., a girl, aged eight years, was admitted to hospital on January 2, 1938, suffering from malignant diphtheria of two days' standing. An initial dose of 100,000 units of diphtheria antitoxin (Commonwealth Serum Laboratories) was administered, 70,000 units being given intramuscularly and 30,000 units intravenously. During the next three days a further 140,000 units were given intramuscularly at intervals of six hours.

The child improved, the pharyngeal slough separating and the œdema subsiding; but on the seventh day the palate became paralysed and tube feeding by the nasal route became necessary. Strychnine was exhibited and the child improved. The paralysis disappeared in a few days, and by the thirtieth day the child was well enough to be allowed the use of an extra pillow. But nine days later the patient's condition again became serious. Evidence of myocardial weakness was apparent, the pulse becoming rapid, feeble and irregular.

The child gradually became worse, and on the forty-sixth day pronounced respiratory embarrassment developed. There was obvious paralysis of the diaphragm, and no improvement had taken place in the condition of the myocardium. Swallowing was difficult because of paralysis of the pharyngeal muscles, and the throat was filled with offensive, semi-purulent mucus and saliva. The voice was a very feeble whisper.

The child was placed in a respirator, set at a rate of 22 pulsations per minute. The head end was tilted downwards about 20° and the pharynx was cleared at frequent intervals with a Yankauers's sucker.

The hypodermic administration of strychnine was continued, and atropine was given to reduce the secretion of saliva and mucus.

The patient's respirations did not synchronize with the excursions of the respirator, but she was comfortable and her condition became slightly better. The voice was still only a whisper, but sips of brandy and water could be swallowed. It was possible to take the child out of the respirator for the few minutes required for nursing purposes, but for three days she was extremely ill, vomiting coffee-ground material persistently. She also required feeding through a nasal tube, catheterization and continuous use of the respirator except during nursing operations. She then began to show slight improvement, vomiting less often and resting well.

On the fifty-third day of her illness, that is, seven days after the onset of the paralysis, she stayed out of the respirator for half an hour without discomfort. The voice was still a whisper and nasal feeding was necessary. Four days later she swallowed without difficulty and stayed out of the respirator for four and a half hours. Three days later again she stayed out for twelve hours. Sixteen days after the onset of paralysis, the use of the respirator was discontinued. The child took food easily and was interested in life again.

Convalescence thereafter was uneventful, and the child was discharged in good health a month later.

CASE II.—A.C., a girl, aged five years, was admitted to hospital on March 31, 1938, suffering from malignant diphtheria of three days' standing. As before, an initial dose of 100,000 units of diphtheria antitoxin (Commonwealth Serum Laboratories) was given by the intravenous and intramuscular routes, and a further 110,000 units were given during the next five days.

During this first week the child was very ill and her pulse rate was persistently below 64 beats per minute. She then improved, and her condition was satisfactory for four weeks. But on the evening of the thirty-sixth day slight weakness of the diaphragm and pharyngeal muscles developed. The child became restless and vomited, and her respiration became rapid and shallow, the *alæ nasi* dilating with inspiration. Swallowing was difficult, and there was a tendency for saliva and mucus to collect in the throat. The cough was weak and ineffectual and the voice feeble.

Next morning the paralysis of both diaphragm and pharyngeal muscles became much more pronounced. The patient was placed in the respirator and the head end was tilted downwards. Although at first her respirations were irregular and out of time with the pulsations of the machine, her condition improved.

At this time the heart had a triple rhythm with reduplication of the first sound. The temperature rose to 37·8° C. (100° F.) and signs of bronchitis appeared.

During the next seven days the child was gravely ill and had to be maintained constantly in the respirator. Feeding through a nasal tube and frequent aspiration of the pharynx were necessary. Atropine and strychnine were given hypodermically every four hours, and "Coramine" was given occasionally. The voice was a whisper. The triple cardiac rhythm persisted, and a patchy consolidation of both lungs developed. The temperature fluctuated between 37·3° and 39·4° C. (99° and 103° F.). No vomiting occurred.

Next day, the eighth after the onset of paralysis and the forty-fourth of the illness, the child stayed out of the respirator for two hours without distress. Next day she stayed out for five hours and took some fluids by the mouth. The following day nasal feeding was discontinued. After five more days there was no respiratory distress at all, even after long periods of unaided breathing; but because the cardiac first sound was still reduplicated and more because a diffuse bronchitis was still present, the respirator was still used at night.

After the sixty-fourth day of the illness, use of the respirator was discontinued. The cardiac rhythm was then normal and the thorax was free from abnormal signs. The child was discharged in good health on July 5, 1938.

CASE III.—R.McG., a girl, aged six years, was admitted to hospital at 4 p.m. on April 27, 1938. The history given was that four weeks prior to admission she had suffered from pharyngeal diphtheria, which had been treated with 9,000 units of diphtheria antitoxin given intramuscularly. A week later her voice had become nasal in quality. For four days prior to admission she had had distress and cyanosis on coughing, for two days difficulty in swallowing, and for several hours constant cyanosis and dyspnœa.

The child was restless and apprehensive and very cyanosed. The respiration rate was between 40 and 50 per minute. The *alæ nasi* dilated widely with inspira-

tion, the accessory muscles pulled hard, the intercostal muscles worked well, but the diaphragm worked very little. The voice was a whisper and the cough weak and ineffectual. A large amount of mucus and saliva, which the child could neither expel nor swallow, had collected in the throat. The heart rate was rapid, being 138 beats per minute, and the rhythm was "tic-tac".

The child was immediately put into a tilted respirator set at 22 pulsations per minute, and the pharynx was cleared with a sucker. She was greatly relieved, although she took approximately 40 breaths to the 22 pulsations of the machine.

By midnight her condition was worse. She resented being fed through the nasal tube, and vomited several times. At 3 a.m. 170 cubic centimetres (six ounces) of 20% glucose in normal saline solution were given intravenously and the child was replaced in the respirator. Atropine and strychnine were given hypodermically. By morning the child was slightly better. Tube feeding and frequent aspiration of the pharynx were necessary; still her respirations did not synchronize with the pulsations of the machine.

For the next eleven days the respirator could be discontinued for no longer than half an hour daily. Tube feeding was necessary, and large amounts of offensive greenish pus were sucked from the throat. The voice was a whisper and the cough feeble. The cardiac rhythm was still "tic-tac", and the child vomited occasionally. Her respirations synchronized with the pulsations of the machine after the second day.

On the twelfth day she stayed out of the respirator for three and a half hours without distress. The mucus from the throat was less copious and less offensive.

Next day she stayed out for eight hours. The voice was stronger, the mucus less troublesome, and she was able to take food by the mouth.

Eight days later, on the twenty-first day after her admission to hospital, use of the respirator was discontinued. The cardiac rhythm was still "tic-tac" and the pulse rapid, but there was no difficulty in breathing or swallowing. The voice was normal and the child looked happy and well. She was discharged in good health on June 18, 1938.

Comment.

Characteristic Features.

The particularly interesting features of this series of cases are as follows.

1. The attack of diphtheria was in two cases of the malignant type, and in the other seems to have been of a comparatively mild type. The records of this hospital show that although nervous and cardiac complications occur more often in cases of malignant diphtheria, they do sometimes occur in the simple pharyngeal type of the disease.

2. The muscles paralysed included the diaphragm and pharyngeal muscles in all cases. In one case (Case II) the intercostal muscles appeared to be slightly affected. In two cases the palate became paralysed at an early stage of the disease.

The symptoms resulting from the respiratory paralysis depend on the inability of the patient to expand his lungs adequately or to deflate them forcibly. Dyspnœa is outstanding, and may be urgent. The respiratory rate is rapid. The accessory respiratory muscles contract forcibly, and the *alæ nasi* dilate with inspiration. Cyanosis may be pronounced. The patient is mentally distressed and very much afraid. The voice is always impaired and may be a mere whisper. The cough is weak and ineffectual, despite the accumulation of secretions in the throat.

The pharyngeal paralysis makes swallowing difficult or impossible. Consequently saliva and mucus, which can neither be swallowed nor expelled, accumulate in the throat, and in the later stages of the illness become purulent and offensive.

3. The onset and progress of the paralysis were strikingly similar in all cases. In two cases a palatal paralysis occurred seven days after the onset of the disease. In all cases a long period intervened between the onset of the disease and the onset of the respiratory paralysis—46, 36 and 28 days, respectively. In all cases the patient made very little progress for a relatively short period—11, 8 and 12 days, respectively. Then in each case a remarkably rapid improvement commenced and was maintained till the respirator was no longer needed. Respiratory and pharyngeal function returned simultaneously.

The rapidity of this recovery was the most striking feature of the series, and is in marked contrast to the tedious change that takes place in poliomyelitis. The difference apparently lies in the quite different nerve tissue reactions in the two diseases.

In diphtheria the infecting organism probably never enters the nerve tissue, but its circulating exotoxins produce an inflammatory reaction, an interstitial neuritis, a proliferative change in the perineurium and endoneurium without any destruction of the nerve parenchyma. In poliomyelitis, on the other hand, the virus probably enters and certainly destroys the cell body of the motor neurone, a completely different process with an almost equally different prognosis.

4. All patients were so ill and distressed that they would soon have died of exhaustion; but all rapidly became comfortable in the respirator, even though synchronization was not good. In this respect it is interesting to remember that in the respiratory paralysis of poliomyelitis it has been found that this failure is almost invariably followed by a fatal termination.

5. All patients had myocardial involvement as well as respiratory paralysis. Diphtheritic cardiac failure, occurring either during the early stage of toxæmia or later in the disease, does not of itself produce the disorder of respiration and consequent distress seen in these cases, but rather vomiting, pallor, abdominal pain, dilatation of the heart, disturbances of the cardiac rhythm and blood pressure and even coma.

6. Pneumonia developed in one case only. This is a frequent and dreaded complication of respiratory paralysis, particularly when coincident pharyngeal paralysis causes accumulation of saliva, mucus and débris in the throat. Tilting of the respirator, frequent cleansing of the pharynx and the use of atropine all helped to lessen the danger.

The Essential Features of Treatment.

The essential features of the treatment adopted were as follows.

1. Massive doses of antitoxin were given to the two patients admitted to hospital early in the course of the disease. All patients with malignant diphtheria admitted to the hospital receive an initial dose of 100,000 units of diphtheria antitoxin (Commonwealth Serum Laboratories), 70,000 units being given by the intramuscular and 30,000 units by the intravenous route. This is followed by a dose every six hours, varying from 10,000 to 40,000 units according to the severity of the illness, until the pharyngeal slough is separating well.

2. Artificial respiration was given by means of a mechanical respirator set at the normal respiratory rate of 22 pulsations per minute.

3. Drainage of the trachea, larynx and pharynx was instituted by tilting of the respirator so that the whole body lay at an angle of approximately 20° from the horizontal position, the head being lowermost. The sucker was used as often as was necessary to clear the pharynx of accumulated secretions. This was one of the most useful and comforting features of the treatment.

4. Atropine given hypodermically in doses of 0·3 to 0·4 milligramme ($^1/_{200}$ to $^1/_{150}$ grain), sometimes even more often than four-hourly, was extremely useful in lessening the secretion of mucus and saliva.

5. Strychnine in doses of 0·6 milligramme ($^1/_{100}$ grain) was given hypodermically to increase the tone of the nervous system. Given either by the mouth or by injection it has been found to be a drug of undoubted value in the treatment of post-diphtheritic paralysis at this hospital.

6. Feeding was carried out by means of a tube passed through the nose into the stomach. Milk, egg flips, brandy, glucose solution and thin gruels were given. One of the patients even learnt to enjoy tea by this route.

7. The intravenous infusion of 20% glucose in normal saline solution was useful. This was given to one child (R.McG.) because she remained restless, resented tube feeding and continued to vomit after several hours in the respirator. It undoubtedly produced a great improvement in her condition. A warning must be given against the administration of large amounts of fluid intravenously if the heart is severely damaged. The danger of sudden cardiac failure and death is very real. One hundred and seventy cubic centimetres (six ounces) would have been too large a volume if this child's cardiac damage had been severe.

In the case of M.H., even though vomiting continued for three days, the intravenous injection of glucose solution was withheld because the child's heart was severely damaged and the risk involved in suddenly increasing her blood volume was too great.

Summary.

1. Three cases of post-diphtheritic respiratory paralysis and their successful treatment in the respirator are described and discussed.

2. The strikingly rapid recovery is noted and compared with the slow progress seen in poliomyelitis.

3. The pathology of post-diphtheritic paralysis and of poliomyelitis is indicated and the difference in recovery is ascribed to the entirely different nerve tissue reactions.

Acknowledgement.

I express my thanks to Dr. Margaret Harper and to Dr. E. H. M. Stephen for permission to report these cases, and to the latter for his many helpful suggestions in the preparation of this report.

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Reviews.

CIVILIZATION AND DISEASE.

IN a small book bearing the title "Civilization and Disease",[1] Dr. C. P. Donnison prosecutes an inquiry into what, at bottom, is the extent of man's ability to adjust himself to his environment throughout the ages. Since the days of the industrial revolution our surroundings have so rapidly and so fundamentally changed that we have been unable to adapt ourselves to them. It is in the realization of this fact that we may, in the author's view, find the explanation of many diseases that afflict the civilized man of today.

Dr. Donnison, in using the word "civilization", refers to that stage of culture which exists in the larger part of Europe and in North America at present; and he has contrasted the incidence of disease in these regions with that amongst more primitive communities, such as those of Tanganyika, Nyasaland, Nigeria, the Gold Coast and Malaya. He is able to add point to his observations from the circumstance that for two and a half years he was medical officer in charge of the South Kavirondo Native Reserve, in which over 200,000 natives lived in proximity to fifty Europeans.

Dr. Donnison adduces statistical evidence in favour of the view that certain diseases are common in the white races of Europe, North America and other regions of the world to which the civilization of the west has spread and that such diseases are prevalent in people of this culture who live in countries inhabited by still primitive races, while they are non-existent or rare in races untouched by western civilization, until the native culture becomes influenced by colonization, education and urbanization. A summary of the position indicates that hyperpiesia, Graves's disease, *diabetes mellitus*, peptic ulcer, rickets and various psychoneuroses bear a close relationship to civilization; and the factors that appear to exert a causal relationship are a change in food supply, with a predisposition to over-nutrition; disorders of a psychogenic nature exerting an influence through centres in the hypothalamic region and the related endocrine and autonomic nervous systems; and an alteration of the response to psychological stimuli under civilized conditions in which reactions produced as a preparation for physical exertion do not find their appropriate outlet. According to Donnison, there is very little evidence that, except in relation to over-nutrition, the dietetic changes that are the result of civilization have any important pathogenic effect; they are far outweighed by the psychogenic factors that provoke mental stress and shock.

From his studies of the incidence of diseases amongst civilized and native peoples, Dr. Donnison is convinced that cultural progress should be correlated with psychological development, which infers an inherent capacity of the person to adapt himself to the community. This capacity is governed essentially by social heredity, but such prophylactic measures as improvements in child guidance possibly represent our most hopeful means of dealing with the physical disorders in which psychogenesis plays an important part.

[1] "Civilization and Disease", by C. P. Donnison, M.D., M.R.C.P., with an introduction by Sir W. Langdon-Brown, M.A., M.D., F.R.C.P.; 1937. London: Baillière, Tindall and Cox. Demy 8vo, pp. 237. Price: 10s. 6d. net.

SURGICAL ANATOMY OF THE HEAD AND NECK.

"SURGICAL ANATOMY OF THE HEAD AND NECK", by Dr. J. F. Barnhill, of Indiana, is a large work, consisting of a course of thirty-five "periods", delivered by the author to post-graduate students for many years and now published by subscription to form a permanent record of his teachings.[1]

In his preface the author assigns the origin of the volume to the chance remark of an English post-graduate teacher that "our American students know less anatomy than those from South Africa!" To appreciate this assertion fully, and to pass proper judgement upon this publication, we must realize that anatomical material in America is scarce, that medical schools are not helped universally by liberal anatomy acts, and that little actual dissecting is done by medical students during their course. Consequently, American post-graduate teaching in surgical anatomy needs to follow the plan of a dissecting manual. From this point of view the compilation of such a detailed volume is amply justified, although much of its subject matter would appear elementary and superfluous and much below the standard of knowledge required of British graduates.

These remarks apply more particularly to the opening lectures, concerned with the anatomy of the triangles, fascial planes and chief vessels, of the neck, which are rudimentary and in places inaccurate, when judged by the standards of the works of Cunningham or Gray. However, these sections have the merit of drawing attention to the practical value of a correct anatomical knowledge of these regions, which would prevent certain common surgical catastrophes. Being below the standard of the remainder of the book, these early lectures give the reader an unfavourable introduction. Few general surgeons, however experienced, would care to apply their knowledge of the cervical fascia so heartily as to enable them during thyreoidectomy "to turn the thyroid lobe out upon the neck in an incredibly short time", and surely fewer surgeons "use the finger after nicking the fascia with the scalpel", as suggested on page 18. The vertical incision along the anterior border of the sterno-mastoid muscle, pictured in Figure IV, for a "large percentage of all operations on the anterior part of the neck", especially for

[1] "Surgical Anatomy of the Head and Neck" by J. F. Barnhill, M.D., F.A.C.S., LL.D., with an introduction by P. S. McKibben; 1937. London: Baillière, Tindall and Cox. Imperial 8vo, pp. 936, with 431 illustrations, of which many are in colour. Price: 90s. net.

ligation and resection of a thrombosed jugular vein, is a very bad one, owing to its well-known likelihood to produce an ugly cheloid and its total disregard of Langer's lines of skin cleavage. The section on tapping of the lateral ventricles of the brain is out of date, and any neurological surgeon worthy of the name will hardly need reminding that "all instruments should be sterilized" and that a circular area of scalp at least forty millimetres in diameter should be shaved. The site advocated for ventricular puncture, that is, one centimetre above and behind the external auditory meatus, has been abandoned long since. Few general surgeons will subscribe to the doctrine of "intracapsular" removal of mixed parotid tumours. The statements that the growth as it enlarges pushes the nerves and vessels aside and that facial palsy is rarely caused by them or by operations for their removal, are hardly in accordance with experiences in this country, where mixed tumours are respected greatly as one of the most difficult and serious forms of cancer to deal with. Notwithstanding these criticisms, the author's handling of such complicated areas as the nasal accessory sinuses, the petrous part of the temporal bone nad the *sella turcica* and its surroundings (the area covered by a "silver dollar") is excellent, although practically no mention is made of the important formation of the *cavum Meckelii*.

The lectures devoted to the middle ear and the mastoid air cells and especially those dealing with the approaches to the pneumatic petrous pyramid for petrositis and the facial canal for lesions of the facial nerve are worthy of detailed study and are obviously the outcome of long practical experience. The applicability of correct anatomical knowledge to the production of local anæsthesia in various surgical procedures and to nerve injections to relieve pain, especially that of trigeminal neuralgia, are all well dealt with, although the descriptions of technique are rather too cursory.

The text itself is well set out, very readable and printed on non-glossy paper of good quality. Numerous typographical errors and mistakes in spelling have been allowed to remain to jar the reader's nerves. These include "illy-developed", "post-urnal" (aural), "stenohyoid", "tyroglossal" and "shealth" (sheath). The terms "hyo-thyroid" and "thyro-hyoid" are used indiscriminately; "hypothreosis" is an unsual term for deficiency of thyreoid secretion, and surely "exophthalmos" is not a type of goitre. The illustrations, which are very numerous, are printed on art paper and often in colour. Many are reproductions of the author's own sketches from actual dissections. Others are rather too diagrammatic to be accurate, although they fix the area and the point under discussion in the reader's mind. They occupy more of the book than the text, but unfortunately they have been placed all together on consecutive pages in the second half of the book and not in order of reference to them in the text, so that the reader wastes much time in finding them during each page of reading. Doubtless many of these apparent deficiencies will be corrected in subsequent editions. In the meantime, oto-rhino-laryngologists, ophthalmologists and dental surgeons will find much valuable information in this book. For the reasons already mentioned it will not prove so helpful to general surgeons, plastic surgeons and neurological surgeons.

ORTHOPÆDIC SURGERY.

"A PRACTICE OF ORTHOPÆDIC SURGERY", by DR. T. P. McMURRAY, has as its object a description of the basic principles which underlie treatment in orthopædic surgery.[1] In his foreword the author reminds us that the orthopædic surgeon must consider the future rather than the immediate condition of the diseased tissues, and he pleads for a conservative outlook on the many conditions that affect growing and developing structures. We heartily endorse this plea, on which too much emphasis cannot be placed; but we fear that it has betrayed the author into a disregard of many of the advances in pathology and biochemistry, which have an important bearing on the study of this subject. *Arthritis deformans* of the spine is described as "essentially a calcification and ossification of the ligaments and periosteum of the affected area"—an opinion that takes no account of the earlier tissue and vascular changes, a knowledge of which should enable the practitioner to avoid such a defeatist attitude. The author's view that "the one outstanding fact in regard to the causation of the disease in adult patients is the frequency with which a history of gonorrhœal infection can be elicited" surely represents a jaundiced view of the ætiology of this disease. A larger amount of space is devoted to tuberculous lesions of bones and joints than to other diseases. It is refreshing to read a review of this subject by one who has obviously drawn on a wealth of clinical material for his opinion. His essentially conservative opinions are never displayed to better advantage and are leavened by a wise selection of the more reliable radical procedures advocated in these cases. While admitting that operations have a definite place in the treatment of Pott's disease, he criticizes the tendency in countries other than England to shorten the period of after-treatment. He asserts his belief that clinical facts suggest a close association between trauma and tuberculous arthritis, but we do not think he has advanced any further proof of this than the oft-repeated statement, which after all is based only on the history of mild degrees of trauma. Such a history can be elicited from almost any person suffering from almost any disease. It is interesting to read his opinion that untoward results have never followed manipulation under anæsthesia of a tuberculous hip in which the more fixed type of deformity has been maintained by strong fibrous ankylosis, provided the joint is immediately and adequately immobilized.

The preference expressed for splints rather than for plaster in the treatment of joint tuberculosis, coupled with meticulous attention to adjustment and fixation of the splint, is supported by logical argument. Other sections of the book, dealing with deformities, diseases of bone, poliomyelitis and injuries and disabilities of the knee and shoulder joints, attain the high standard which is to be expected of a work coming from the author's school and dedicated to the memory of Sir Robert Jones. Dr. McMurray emphasizes the necessity of cooperation by practitioners in other branches of medicine and surgery in the elucidation of many orthopædic problems, and for this reason he opposes the present tendency to the establishment of special hospitals for the treatment of sectional diseases.

The illustrations are well selected and well produced, but the one on page 306 will invite criticism from the thoughtful student. Unfortunately there are many typographical errors. The book is of a handy size for reference and should prove of good service to the student and busy practitioner, for whom it will solve many a problem.

[1] "A Practice of Orthopædic Surgery", by T. P. McMurray, M.B., M.Ch., F.R.C.S.; 1937. London: Edward Arnold and Company. Demy 8vo, pp. 479, with illustrations. Price: 21s. net.

EXAMINATION OF THE NERVOUS SYSTEM.

DR. MONRAD-KROHN'S handbook "The Clinical Examination of the Nervous System" has for many years enjoyed a well-deserved reputation.[1] Its comprehensiveness and the practical way in which clinical methods of proved value are described have contributed largely to its success.

Advances in diagnostic technique, which have taken place since the appearance of the last edition in 1933, have necessitated the rewriting of several chapters and the addition of several illustrations. Encephalography and ventriculography are both described in detail, as also is angiography, which the author seldom sees fit to employ. The last sections of the book give useful advice on the first routine examination, the examination of unconscious patients and supplementary tests for epilepsy.

More than one hundred illustrations and diagrams enhance the value of this seventh edition.

[1] "Clinical Examination of the Nervous System", by G. H. Monrad-Krohn, M.D., F.R.C.P.; Seventh Edition; 1938. London: H. K. Lewis and Company Limited. Crown 8vo, pp. 338, with 111 illustrations, including 58 plates. Price: 8s. 6d. net.

The Medical Journal of Australia

SATURDAY, DECEMBER 17, 1938.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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ENDOCRINE THERAPY.

G. W. E. RUSSELL, in his "Collections and Recollections", described Gladstone's conversation as resembling a flood, particularly in its volume and rapidity, the amount of varied matter brought into it, the hopelessness of trying to withstand it, and the subdued but fertilized condition of the subjected area. This description might aptly be applied to the constant stream of books and articles on endocrinology, though the practising physician may feel at times that he is more subdued than fertilized, especially when he attempts to treat the patients concerned. Then he feels that, although therapy may yield results when applied to the laboratory dog or tadpole, its application to the human subject is very different. While he is attempting to assess the degree of success, if any, that has attended his earnest efforts, the relentless flood of endocrine research is pouring down upon him all the time. Amidst the swirl of disturbing eddies in laboratory doctrine and the resounding splashes of claims from commercial manufacturers, it is little wonder that he becomes confused.

E. H. Rynearson and C. H. Hodgson have recently compiled an excellent and pointed summary of recent advances in knowledge of the anterior lobe of the hypophysis.[1] This contains some pungent and even humorous remarks, which are worth quoting. The suggestion is made that the possibility of inducing lactation in any mammal regardless of sex may make fatherhood less simple in the future; but we may pass on to more serious topics. A recent claim that certain workers have isolated a crystalline hormone of high lactogenic potency is discussed, but these authors regard its practical application as disappointing. Similarly, attempts to treat diabetes from the pituitary aspect are at present not sufficiently successful to encourage us to abandon the accepted methods. Again, Rynearson and Hodgson hope that studies of the thyreotropic hormone may help in the management of some of those contradictory clinical states that are related to thyreoid function. The same note is sounded in all these expressions of opinion: hope is expressed, but certainly nothing practical has yet been gained. Even more important are the bedside applications of the gonadotropic hormones. Rynearson and Hodgson describe the "hectic race" run by both laboratory workers and clinicians a little time ago. The contest is not yet over, as they justly remark, and we must agree with them that at least some of the workers in both fields are beginning to slow down "so as to catch their second wind and see how far they have come".

Their conclusions illustrate well these references to the gap between ward and laboratory, which is so disheartening to the practitioner of medicine. They point out that on the one hand certain endocrinologists have reported brilliant cures of all manner of conditions, even baldness, and on the other hand laboratory workers can do marvellous things to animals with extracts that seem to leave the human patient much the same as he was before. Worried by these contradictions, conservative physicians have been wondering just how important a part endocrines are destined to play in practical treatment. But a better day is dawning. Diagnosis is being made more critically. There is a lessening tendency to label vague clinical states dogmatically, yet arbitrarily, and on insufficient grounds as being due to some definite endo-

[1] *Archives of Internal Medicine*, July, 1938.

crine dysfunction. As these authors wittily remark, "some writers are even stating that they do not know what is wrong with the patient". Some time ago we pointed out that it was to the general practitioner that we looked in the end for evidence of the practical usefulness of any advance in scientific medicine. The future will probably prove this statement to be just as true in endocrinology as in other branches of modern medical knowledge. At present there are on the market many endocrine preparations that are, unless administered by the correct channels, quite inert. It is essential, however, to recognize that far-reaching effects may accrue from the administration of hormones, and therefore the importance of knowing their indications and contraindications needs no further emphasis. The recent discovery of œstrogenic compounds of extremely high potency turns a significant page in the history of medical research. Let us not misread its teachings or fail to recognize the powerful nature of the forces thus placed in our hands. While the physician is looking eagerly to the laboratory to furnish him with fresh weapons in his recently begun fight against endocrine disorders, he must not neglect his own department of accurate clinical observation. The more clearly endocrine syndromes can be demarcated and the more generally they are recognized, the more prepared will the field be for the therapy of the future. There is a moral in this, of course; but without intending any double meaning we may truly say that in this warfare, as in other and harsher conflicts, the needs of the forces engaged include not only organization, adequate direction and armaments, but also a lively intelligence department.

Current Comment.

THE CONTINUED USE OF PROTAMINE ZINC INSULIN.

ABOUT two years have now passed since protamine zinc insulin came into fairly general use in American diabetic clinics. As is the case with all new therapeutic agents, only the passage of time can stabilize our knowledge of this agent and enable us to assess its value with certainty. Whenever any remedy for any of the graver diseases is introduced, it is likely to provide matter for headlines in the Press, both medical and lay, and to attract criticism, both favourable and hostile. But it is fair to say that while protamine zinc insulin has certain disadvantages, its use has become an established part of the therapy of diabetes. That one of its advocates is E. P. Joslin should be some guarantee of its value.

In the opinion of Elaine P. Ralli, Harry D. Fein and Francis J. Lovelock, all members of the staff of Bellevue Hospital, New York, there is as yet but little precise information available as to the true worth of protamine zinc insulin, or as to what extent it must be combined with soluble insulin in treatment.[1] They have lately issued a report on the progress of twenty diabetic patients treated with the new insulin. Sixteen of these were studied for periods of not less than eight months, and the remaining four were under observation for only one or two months, at the end of which time the use of protamine zinc insulin was discontinued, since the authors were unable to prevent the onset of a significant degree of glycosuria in these subjects. All the patients had previously been under treatment with soluble insulin and the average duration of the disease was about six years. They all entered hospital with the full knowledge, on the part of Ralli and her co-workers, of their dietetic and soluble insulin requirements. When the three investigators had satisfied themselves as to the amount of soluble insulin necessary to prevent glycosuria, treatment with protamine zinc insulin was begun and the soluble insulin was carefully and gradually reduced and, when possible, discontinued. Four fractions of urine were collected throughout twenty-four hours, and frequent blood sugar estimations were made during the periods of adjustment, sometimes at two-hourly intervals. The end result was that four of the twenty patients were never successfully transferred to protamine zinc insulin, and, as stated, all attempts to effect the change had to be abandoned at the end of two months; no matter what devices were adopted to combine the old and the new insulins, all such attempts were unsuccessful. To five of the remaining sixteen patients protamine zinc insulin was given for periods varying between eight months and nearly two years. In five cases the therapy was used, but had to be discontinued because of the impossibility of preventing glycosuria without producing insulin reactions, with sequelæ that often incapacitated the patients for a day or more. An outstanding feature of insulin shock was intractable headache, which despite the administration of glucose often lasted for days on end; in two instances these untoward symptoms were accompanied by mental derangement. Of eleven patients who continued to take protamine zinc insulin, eight still needed additional dosage of soluble insulin ranging between ten and sixty units, but the daily injections fell from four of the old insulin to one or two by the combined method. In the case of five of these

[1] *The American Journal of the Medical Sciences*, July, 1938.

patients there was a reduction in the required dosage of from twelve to twenty units *per diem*. The weight charts provided no useful information; certain patients grew heavier, some lost flesh, and others experienced no change. But of the whole group three patients only were finally and adequately controlled by the use of protamine zinc insulin alone and improved in general condition. One of the three, who was previously a victim of ketosis and insulin shock, gained 5·4 kilograms (twelve pounds) in weight and never again suffered from more than a moderate glycosuria.

The fact emerges from this study that in only about half the cases was it possible successfully to employ this agent alone, eight patients needing the soluble substance as well as protamine zinc insulin. Whether this combined treatment is satisfactory is a matter for debate.

In some cases in which protamine zinc insulin was used, while at first a clinical improvement occurred and the number of injections was reduced, the benefit did not last for more than six months. The reason for this is still debatable, but there is evidence that gives colour to the belief that the new insulin may lead to fibrosis in the subcutaneous tissues, which prevents its uniform absorption. In many of the patients under the care of Ralli and her colleagues small nodules appeared beneath the skin after the prolonged use of protamine zinc insulin; they were of a firm consistency and slow to disappear. Thus may perhaps be explained the alternations of severe shock and glycosuria that were evident in five of the patients.

When insulin shock appears as the result of injections of protamine zinc insulin, it is of insidious onset. The patient has little warning of its coming and so is caught unprepared. However, severe headache should be regarded as a danger signal by the clinician.

The authors express the opinion that long observation of the patients is necessary, for protamine zinc therapy that is successful at the outset may not necessarily continue to be so over periods of months, and a constant watch must be maintained for evidences of irregularity of absorption with consequent glycosuria or hypoglycæmia. If at the end of a six months' trial the advantages of the new treatment are not plainly manifest, Ralli and her co-workers are content to discontinue the use of the protamine.

From what we may glean from a survey of current literature on this subject, these somewhat pessimistic opinions would not appear to be universally accepted. A Sydney physician is recently reported in our columns as having said, with a quotation from Joslin to support him, that "the introduction of protamine zinc insulin has carried control [that is, of diabetes] to a further stage of efficiency", and this in spite of the disadvantages briefly outlined above. Like many of us, however, he looks forward with some confidence to the day when the oral administration of insulin in combination with hexylresorcinol will be an everyday affair.

Most observers abroad now agree that the favourable influence of protamine zinc insulin upon diabetes in children is most impressive, particularly in the improvement effected in fat metabolism. Rosenthal and Finkelstein, further, after a study of seventy patients, believe that with the cooperation of the patients there is no bar to the safe treatment of diabetics in outdoor clinics. Other clinicians concur in this plan in the case of patients whose glycosuria has previously been controlled with an amount of forty units of old insulin or less. For these and other reasons we must wait for the publication of the matured opinions of the clinicians working amongst diabetics in the metropolitan hospitals.

CEREBRAL INJURY ASSOCIATED WITH APNŒA OF THE NEW-BORN.

THE problem of the relief of pain in child-birth is not yet satisfactorily solved. Much has been written on this subject, in medical journals and in the lay Press, particularly in the United States of America. Those who advocate the giving of analgesics during labour are too apt to evaluate the results of the use of these drugs by immediate considerations only, ignoring more remote consequences. Frederic Schreiber has made a study of apnœa of the newborn as a cause of symptoms of cerebral damage in childhood.[1] He emphasizes that analgesics given to the mother during labour may in many instances cause fœtal anoxæmia, with resultant injury to cerebral tissue. One of the toxic effects common to morphine, scopolamine and the barbiturates is depression of the respiratory centre. There are, too, great individual variations in the response to these drugs. Respiratory depression may occur in the mother, however carefully dosage is regulated, and it is impossible to forecast the effect of these drugs on the respiratory centre of the fœtal brain. Schreiber is a neurological surgeon and his paper was read before the Section of Obstetrics, Gynecology and Abdominal Surgery of the American Medical Association. It is an instance of useful collaboration between two specialties and is based on the examination of 685 children with symptoms of cerebral injury or disease. Of these, 131 were seen because of convulsions, 69 because of spasticity, 130 for mental retardation, 248 because of combinations of these symptoms and the remaining 107 for miscellaneous neurological conditions. After the exclusion of those whose histories showed any other possible cause for their symptoms, 500 children remained, and of these approximately 70% had a history of apnœa at birth. The part played by dystocia, intervention, intracranial hæmorrhage and drugs in causing apnœa was not determined. The incidence of cerebral symptoms in childhood without a history of apnœa at birth should be determined for comparison.

[1] *The Journal of the American Medical Association*, October 1, 1938.

Abstracts from Current Medical Literature.

MEDICINE.

Addiction to Phenolphthalein.

HORACE W. SOPER (*The American Journal of Digestive Diseases*, July, 1938) found that of 1,000 patients who attended an American gastro-enterological clinic, 177 employed phenolphthalein as an habitual laxative. Of these, 152 suffered from catarrhal colitis and three from chronic stomatitis; all were cured after withdrawal of the drug. Some manufacturers of agar-and-oil laxatives had added a dose of phenolphthalein to make the preparations more active, and some patients had thus become unwitting addicts.

Lipoid Nephrosis.

A DETAILED study of nine patients during a varying number of years forms the basis of a study of lipoid nephrosis by F. D. Murphy *et alii* (*Archives of Internal Medicine*, September, 1938). These authors maintain that prolonged observation of a patient is essential for the correct diagnosis of lipoid nephrosis. The signs and symptoms of chronic glomerulonephritis are so variable that there are phases of this disease when a true lipoid nephrosis may falsely appear to exist if an opinion is based on a single observation of the case. There may be periods in the course of chronic nephritis, lasting for some weeks or some months, in which the nephrotic syndrome predominates, yet further study proves conclusively the underlying inflammatory nature of the condition. Lipoid nephrosis is identified clinically by both positive and negative features. Pronounced albuminuria, hypercholesterolæmia, œdema and the presence of doubly refractory lipoids in the urine are characteristic features; but the absence of hypertension, of nitrogen retention and of genuine uræmia, and the freedom from an abnormal number of red cells in the urinary sediment are just as important. Any indications of cardiovascular change, such as cardiac hypertrophy, arteriosclerosis or albuminuric retinitis, are conspicuously absent. Reduction of the protein content of the plasma, and in particular a deficit of albumin in the plasma, caused by the excretion of large quantities of albumin in the urine, have come to be looked on as important clinical features. The course of lipoid nephrosis extends over a period of months to several years and frequently terminates in complete recovery. Occasionally during the periods of extreme œdema a secondary infection, usually pneumococcal, develops and terminates fatally. The outstanding morphological changes were those found in the proximal portion of the convoluted tubules. There were deposits of fatty substances near the basilar portion of the epithelial cells, in which doubly refractive properties were found on examination with the polarizing microscope. In the epithelium also evidence of various other so-called degenerative processes, consisting of hyaline droplet infiltration and hydropic degeneration, was found. The lumina of the tubules were irregular and often contained amorphous granular material. The involvement of the glomeruli was not uniform and was not of the same nature as the changes found in glomerulonephritis. A slight but not uniform thickening of the basement membrane of the capillaries was found in an occasional glomerulus. Infiltration of the glomerular cells by fatty substances was not an outstanding feature. In the interstitial tissues of the kidney no inflammatory reaction was observed, and vascular changes were absent. The fundamental change in lipoid nephrosis is the increased permeability of the capillaries of the glomeruli. Whether this functional derangement is followed by a structural alteration is a problem for future investigation. The authors conclude that there is sufficient reason for maintaining the distinction of lipoid nephrosis in the classification of Bright's disease.

Bronchiectasis.

S. H. WATSON AND C. S. KIBLER (*The Journal of the American Medical Association*, July 30, 1938) have observed that in a large number of cases of bronchiectasis there is a history of allergic symptoms, such as those of hay fever, eczema and asthma. Examination of the sputa of such patients demonstrated the presence of 10% or more eosinophile cells among the leucocytes present. In fully 90% of cases of bronchiectasis a definite diagnosis of allergy may be made on the evidence found. The authors therefore describe an allergic bronchiectasis. Basal allergic bronchitis, with swelling of the mucosa and outpouring of tenacious secretion combined with bacterial infection and poor drainage, seems an adequate cause for the production of atelectasis. As a result of this condition of atelectasis, bronchiectasis may develop sooner or later. Assuming that this is the chain of events, it is suggested that bronchiectasis is preventible if the basal allergic bronchitis is recognized as such and if the patient is given intensive treatment. Even after some dilatation of the bronchi has occurred, the disease may be combated if treatment is instituted early. After investigation all patients are given treatment by means of desensitization, elimination diets and the avoidance of allergens in the environment. Improvement is in proportion to the stage of advancement of the disease. It is well known that an attack of acute respiratory infection often initiates prolonged asthma. It seems reasonable that the association of bronchiectasis and respiratory infection should be explained on the hypothesis that the respiratory infection initiates a basal allergic bronchitis with resulting bronchiectasis.

Meningococcal Meningitis.

H. S. BANKS (*The Lancet*, July 2, 1938) discusses the treatment of acute meningococcal meningitis with serum and sulphanilamide. Thirty-eight patients were treated with meningococcus antitoxin, given intrathecally, intravenously and by the cisternal route. Two deaths followed cisternal puncture. The results of the early use of serum were good; there were only six deaths in the series of patients so treated, and these occurred mainly in the age-group from twenty- to forty years. However, the use of serum and of sulphanilamide without intrathecal medication was more effective. Initial doses of 120 cubic centimetres of serum for adults and 90 cubic centimetres for children were given intravenously and repeated next day unless the patient's condition was improving. It has been shown that sulphanilamide is effective in meningococcal infections in mice, whereas "Proseptasine" and "Soluseptasine" are without effect in such infections. The dose of sulphanilamide given to the patients in this series was one gramme per 6·3 kilograms (one stone) of body weight per day. This was divided and administered at intervals of four or six hours. Infants appeared to require three times and young children one and a half times as much as adults. Patients over the age of forty years were given proportionately smaller doses. This rate of dosage was maintained for not more than three days. The drug was given by mouth; in comatose patients it was given by catheter if necessary. It was readily absorbed. After the administration of these standard doses the blood as a rule contained two to five milligrammes per 100 cubic centimetres, and the cerebro-spinal fluid a similar proportion. Cyanosis occurred in almost every case. The author states that it was not due to sulphæmoglobinæmia or methæmoglobinæmia; it appeared to have no harmful effect and disappeared rapidly as soon as the drug was withheld. The cyanosis was regarded as a simple coloration of the blood due to unknown oxidation products of the benzene ring. Usually the cerebro-spinal fluid became free from organisms in from twelve to twenty-four hours from the commencement of treatment, and remained so. Clinical improvement occurred at the same time as a rule. It was found necessary to maintain the full dose of sulphanilamide for at least three days, in spite of cyanosis, and to continue with a reduced dosage for several days more. Eighteen patients were treated with sulphanilamide alone; of these, three died, the remainder recovered. These results were considered satisfactory; but on

the whole the author thinks it advisable for the present to continue to treat these patients with serum given intravenously as well as with sulphanilamide.

Tuberculosis.

E. BERNARD AND J. WEIL (*La Presse Médicale*, April 30, 1938) discuss the time elapsing between primary infection with tubercle bacilli and the establishment of pulmonary tuberculosis. The classical doctrine, evolved by Behring and Naegeli, was that tuberculosis in the adult was merely the final consequence of an infection contracted at an early age. Recently, however, a certain number of cases of tuberculosis have been recognized as following recent infections. Scheel stated that tuberculous disease in adolescents or young adults was due in most cases to a primary infection occurring a few months or two or three years previously. Certain clinical facts support this view. For instance, infants who have suffered from tuberculosis rarely suffer from phthisis as adults; nor does the history of phthisical patients often disclose a previous extrapulmonary tuberculous infection other than pleurisy. There are clinical varieties of tuberculosis in the adult that can with certainty be attributed to a recent primary infection. Pleurisy, infantile types of pulmonary lesions, and inactive pulmonary lesions, which that long tradition had attributed to reinfection, are among these types. The authors record that Courcoux and Alibert studied the history, as regards tuberculosis, of ninety students and nurses whose skins failed to react to tuberculin at the commencement of their hospital work. Fifteen months later they noted seventeen tuberculous lesions among them, six of these being pulmonary. Heinbeck and Scheel observed similar evidence of tuberculous disease, after some months of hospital work, among students whose skins had not reacted to the tuberculin test at the commencement of their medical studies. Scheel stated that between the ages of ten and twenty-five years the percentage of persons whose skins reacted to the tuberculin test increased from 25% to 85% or 100%. This percentage was 45 at fifteen years and 70 at twenty years of age. In other words, tuberculous infection was most frequent at these ages. The authors state that these figures of Scheel do not agree with those of other observers, who noted that at the age of fifteen years 80% or 100% of all persons reacted to the cutaneous tuberculin test, whereas between the ages of two and fifteen years the morbidity and mortality of tuberculosis were very low. They deduce that rates of infection and of morbidity do not run parallel. Actually phthisis is rare before the ages of fifteen years in boys and of twelve years in girls. After fifteen years of age it increases to a maximum at about the twentieth year, remains elevated until the thirtieth year in women and the fortieth year in men, and then decreases. The authors observe with interest that the percentage of persons reacting to the cutaneous tuberculin test rose from 55 at the age of five years to 97 at the age of eighteen years, whereas the "phthisical ages" were between fifteen and forty years. It seemed that during the last quarter of a century there had been a diminution in the time interval between the primary infection and the presence of tuberculous disease. The authors suggest that students and nurses should have two or three months' rest, as a prophylactic measure, at the time when their reactions to the cutaneous tuberculin test were first elicited.

Allergy and Occupation.

ERICH URBACH (*Occupation and Health*, Geneva, 1938) deals with the problem of allergy in relation to occupation. He recognizes the fact that many obscure maladies, rightly or wrongly, are often considered to be forms of allergy. A critical approach in considering a case thought to be allergic is provided by some definitions drawn up by Doerr. Acquired allergy is shown, for example, when one of a group of ten painters using turpentine regularly shows a reaction (eczema), despite the fact that formerly he could use the product with impunity. Allergic specificity may be monovalent or polyvalent. An example of the latter is the hypersensitivity of an individual to any member of the phenol group. But when an attack of asthma is brought on not only by fur, for example, but also by smoke, cold, heat or emotion, it is no longer a question of allergic but of "pathergic" hypersensitivity, in which, as far as is known, no antigen-antibody reaction intervenes. It is essential to determine for each chemical product the concentration that can be tolerated by a normal individual without reaction. Irritation of the skin or of the mucous membrane by a solution below this limit may be considered as specific and allergic. Proof should be given that the special properties of the reacting cells are the cause of the abnormal sensitivity. Allergens are often proteins. If they are not proteins, they must be conjugated with albuminoids. Examples of the latter are chemical products, medicaments *et cetera*. These are called "demi-antigens" or "haptines", and are capable of causing specific reaction with antibodies, but are incapable of causing their formation in the system. Conditions are described for proving that a particular substance is the responsible allergen. The author gives numerous examples of allergens found in various occupations and the type of lesion resulting, the great bulk of the allergens mentioned belonging to the "haptines". If the allergen can be excluded the therapy of allergic conditions is relatively simple. Desensitization by repeated injections of the offending allergen often gives very good results when the allergen is a protein, but it hardly ever succeeds in cases of allergy caused by a chemical product. The author discusses the various clinical forms of occupational allergy. He points out that anaphylactic shock rarely occurs as a primary form of occupational allergy, though it may occur in bee-keepers. It may also occur in doctors and laboratory attendants who have become sensitized to *ascarides*. Angioneurotic œdema is at times found amongst doctors and nurses sensitized to "Salvarsan". Bronchial asthma is of frequent occurrence. Allergic eye disease is found, for instance, amongst flute-players using instruments made of rare type of wood, and amongst coachmen presenting hypersensitivity to horse scale. Occupational eczema is dealt with fully, and many other forms of allergic disease are mentioned.

A New Drug for Epilepsy.

H. H. MERRITT AND T. J. PUTNAM (*The Journal of the American Medical Association*, September 17, 1938) have treated 200 patients who suffered from frequent convulsive seizures, unrelieved by orthodox treatment, with sodium diphenyl hydantoinate in doses of 0·2 to 0·6 gramme daily. This drug had previously been found to be one of the most effective of a large number of chemicals selected on theoretical grounds for use in protecting animals from electrically produced convulsions. Of 118 patients who suffered frequent major epileptic attacks and who received this treatment for two to eleven months, 68 were completely relieved. The attacks were greatly reduced in frequency in an additional 32 cases. Patients suffering from minor seizures were also greatly benefited. Cutaneous eruptions occurred in ten cases and a number of minor toxic symptoms were observed.

Determination of the Circulation Time.

S. CANDEL (*Annals of Internal Medicine*, August, 1938) describes a new method of determining the pulmonary circulation time. Paraldehyde is injected into a cubital vein in a dose of 1·4 cubic centimetres, and on its arrival in the lungs produces a cough. The use of paraldehyde has the advantages that the end-point of the determination, the cough, is sharp and purely objective, that there is a wide margin of safety, and that the drug is readily available and may be taken directly from the bottle without previous preparation or sterilization. Hypnosis and dizziness may be produced rarely, but pass off in a few minutes without unpleasant effects.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Section of Medicine of the New South Wales Branch of the British Medical Association was held at the Robert H. Todd Assembly Hall, 135 Macquarie Street, Sydney, on August 18, 1938, DR. A. S. WALKER in the chair.

Cardiac Irregularities.

DR. WILFRED EVANS read a paper entitled "Cardiac Irregularities Other than Auricular Fibrillation" (see page 1023).

DR. W. E. FISHER said that he wished to ask Dr. Evans a question concerning those cases in which paroxysmal tachycardia lasted longer than in any of those of which tracings had been shown that night. Dr. Fisher had in mind particularly three patients, one of whom had had many attacks, several of them lasting a whole day; one, which lasted a week, produced congestive failure. A second patient had had two attacks in a period of eighteen months; and the third patient, who had been referred to him by Professor Lambie for cardiac pain, had had three attacks lasting over one week, each producing congestive failure, with an interval of seven years between attacks. In none of these cases had organic disease been found. In the first case emotional tension was probably a factor. This patient was the mother of one of the victims of the *Rodney* motor launch disaster, and after a free period of nine months had been subject to frequent attacks since. Dr. Fisher had found quinidine of value, in large doses at the beginning and small doses as a continuation. He asked Dr. Evans his opinion of the ætiology in these cases, particularly when there were long intervals between attacks. He also asked Dr. Evans his opinion of the long-continued use of quinidine. In one case of Dr. Fisher's a skin lesion had developed, which a dermatologist had suggested was due to quinidine.

SIR CHARLES BLACKBURN congratulated Dr. Evans on his paper and referred to the condition of sinus arrhythmia as being a very interesting one quite apart from the state of the heart in which it was encountered. He personally regarded it as often a straw that showed the way the wind was blowing with regard to the state of the patient's nervous system. In adults he had particularly noted it in routine examination of those of the neuro-circulatory type and this fact gave a hint to the possibility of the trouble's generally being of nervous origin. With regard to the very interesting series of patients with extrasystoles referred to by Dr. Evans, Sir Charles Blackburn said it would be interesting to know what proportion of the patients attending the cardiac clinic were women and how many of those with ventricular extrasystoles not of organic origin were women. In raising this point he had in mind those patients in whom no organic lesion could be demonstrated who yet exhibited extrasystoles apparently due to reflex causes, tobacco *et cetera*. Probably this aspect was of no great importance in this series, as patients coming to the clinic were likely to have organic lesions and so their extrasystoles would be usually associated with frank cardiac disease and a muscular tissue in which irritable foci would be readily set up and such a list as Dr. Evans had shown would be expected.

Sir Charles Blackburn then referred to MacKenzie's dictum that if the heart was sound extrasystoles were of no significance, and if the heart was not sound they made the prognosis no worse. Noting the large number of cases of myocardial degeneration in the list led him to make an observation that really had no significance in relation to the subject under discussion, and this was that where the prognosis of an individual well on in years was concerned the demonstration of myocardial degeneration was not of much help in the assessment of the probable period of survival. Some of Sir Charles Blackburn's patients had had myocardial degeneration shown electrocardiographically ever since the general introduction of that piece of apparatus, the electrocardiograph, and were still living happily, with care.

He thought that medical men should be careful in their choice of terms in discussing the state of the heart in those past middle life. Many who would accept cheerfully a statement that their hearts were showing senile changes and that they had in consequence to restrict their activities, would crumple under the shadow of an electrocardiogram that conveyed the news that they had myocardial degeneration.

Sir Charles Blackburn said that in such cases he did not ask for an electrocardiogram as a routine, but only when there was a special indication. He believed that a careful clinical examination would usually indicate those cases in which an electrocardiogram would be of therapeutic assistance.

DR. J. H. HALLIDAY referred particularly to one point mentioned by Sir Charles Blackburn, the question of extrasystoles. If a tracing showed that these came from more than one focus they had to be regarded more seriously. Another point in the question of arrhythmias was their effect upon circulatory efficiency. When prolonged they might cause circulatory failure, especially when there was associated myocardial degeneration. This possibility had to be faced in cases of paroxysmal tachycardia or auricular flutter. Dr. Halliday referred to a case of paroxysmal tachycardia in which he had been called in. The patient was the subject of hypertensive heart disease and had previously had attacks of paroxysmal tachycardia. This attack was associated with collapse and considerable distress. Dr. Halliday had applied pressure over the right carotid sinus; this measure had produced some temporary irregularity of the heart, but the tachycardia had persisted. He had then caught the left carotid trunk between his fingers and had massaged up along the carotid artery, when the attack had promptly ceased.

DR. A. J. HOOD STOBO thanked Dr. Evans for his paper and demonstrated on the blackboard a schema for a simple understanding of the electrocardiographic changes found in the arrhythmias. He said that he had found it very useful, particularly for demonstrating to students. He asked Dr. Evans a question concerning one of the electrocardiograms shown in one of the diagrams illustrating complete heart block. Dr. Evans had pointed out a ventricular extrasystole, and Dr. Stobo drew attention to the fact that in complete heart block all the ventricular complexes had their origin below the auriculo-ventricular bundle.

DR. HAROLD THOMAS asked Dr. Evans how he would distinguish arborization block, more particularly from right and left branch bundle block.

DR. ALLAN WALKER, before calling upon Dr. Evans to reply, thanked him for the unique set of records he had shown and the way he had expounded them. He said that he had found it an interesting pastime evaluating the arrhythmias from the clinical point of view. He said that the great value of the electrocardiogram was that it was an exact method of checking a clinical opinion. Some of the most interesting arrhythmias occurred after acute vascular accidents, often in rapid sequence. He recalled a patient in distress from a coronary occlusion who had also had pulmonary tuberculosis. When Dr. Walker saw him he had a very slow pulse rate, due to heart block or extreme bradycardia. When the patient leaned forward in the sitting position his heart broke into a rapid auricular fibrillation; when he lay back on his pillows its beats became regular and numbered about 80 per minute. In such cases the question was what was happening in the heart.

Dr. Walker also referred to ventricular tachycardia and impure flutter. He said that he had recently encountered a case in which it had been difficult to differentiate these conditions on purely clinical evidence. Dr. Evans had discussed the sequence of events in ventricular standstill, and Dr. Walker had found this most interesting. He spoke of a patient subject to Stokes-Adams attacks and hæmoptysis,

who had been told to go to the country as she was suffering from pulmonary tuberculosis. She had mitral stenosis, and this had been found to be the real cause of her hæmoptysis. Heart block had developed, probably from the same cause. She became subject to Stokes-Adams attacks that took the form of fits, and on that account was thought to be epileptic. He had spent one night at this patient's bedside, when she had had numbers of these attacks, had become moribund and had afterwards died. He had written a clinical account of his experiences that night. On reading it again recently he had found that it corresponded very closely with what Dr. Evans had said.

Dr. Evans, in reply to Dr. Fisher, said that the ætiological factor of the greatest importance in attacks of paroxysmal tachycardia at long intervals was the emotional one. In these cases it was a hyperactive sympathetic which produced the attack. With regard to quinidine, he said that he had often given it for a long period with no ill effect, and had certainly never seen skin disease result from its use. With regard to Sir Charles Blackburn's comment upon sinus arrhythmia, Dr. Evans said that the sinus was under the control of the sympathetic and the vagus, and a nervous state must have an effect. However, in older people an organic basis should be envisaged. As for extrasystoles in prognosis, no prognostic view could be drawn from the occurrence of extrasystoles in older people. Dr. Evans thought that his records showed that extrasystoles occurring in patients over the age of forty years could not be ignored. They made the possibility of organic disease greater.

Dr. Evans did not altogether agree with Sir Charles Blackburn about evidence of coronary disease in older people. In every suspicious case Dr. Evans made an electrocardiographic examination. Very often the electrocardiogram revealed no abnormality, when he would have expected it to reveal some abnormal condition. Therefore he thought that when the electrocardiogram revealed some abnormality, especially when older people were the patients, their relatives should be told that their expectation of life was below average. He did not believe in keeping them in bed, but thought that they should be kept from undue exercise and excitement. If definite myocardial degeneration was shown, there should be greater restriction of activity. He thought the electrocardiogram of some use and significance.

In reply to Dr. Halliday, Dr. Evans said that he quite agreed that the outlook in these cases depended upon the ventricular rate. This principle held in all tachycardia, and it had to be controlled, as it was the important factor. In reply to Dr. Stobo, Dr. Evans referred to the interesting diagram that Dr. Stobo had drawn. With reference to Dr. Stobo's question, Dr. Evans said that he failed to see why in heart block there could not be some additional stimulus to the ventricle between the ordinary complexes. The idioventricular rhythm was initiated at the upper part of the ventricle; and surely an irritable focus in a different part of the ventricle could produce an extrasystole.

In reply to Dr. Harold Thomas, Dr. Evans said that it was difficult to tell arborization block from right or left bundle branch block. He thought arborization block was characterized by low voltage and wide *Q R S* complexes. He had recently seen very few cases coming into the category of arborization block. He had been content to refer to right or left bundle branch block or atypical block. Dr. Evans, in commenting upon Dr. Walker's reference to irregularities following coronary thrombosis, said that in these cases the ventricular muscle was very much more irritable, and all sorts of irregularities could occur.

A MEETING of the New South Wales Branch of the British Medical Association was held at Lewisham Hospital, West Street, Lewisham, on August 18, 1938. The meeting took the form a number of clinical demonstrations by members of the honorary staff.

Peptic Ulcer.

DR. J. D. HERLIHY showed two patients to illustrate the results of immediate feeding in hæmatemesis and melena, by means of Witts's modified Meulengracht routine. In both cases the diagnosis was severe hæmorrhage; in one the ulcer was gastric and in the other duodenal.

The first patient was a female, aged fifty-one years, who had a history of gastric ulcer of five years' duration. She had undergone the starvation treatment on a previous occasion, and her own comparison of the two methods was instructive. This patient was also interesting in that, with each acute attack, she had had an associated thyreotoxicosis, the right lobe being greatly enlarged. Without any special treatment for the thyreoid disorder these symptoms subsided in proportion to the improvement in the symptoms due to the ulcer. Dr. Herlihy remarked that a neurogenic basis for her troubles seemed highly probable. At the time of the meeting only exophthalmos was present, and she had returned to her usual work as an office cleaner.

Dr. Herlihy's second patient was a man, aged sixty-four years, who had been admitted to hospital in a uræmic state, with a history of severe melena. His hæmoglobin value was 29%, and the urea content of his blood was over 200 milligrammes per 100 cubic centimetres. His condition was grave, and uræmic twitchings were present. Regular feedings had been instituted from the time of admission, and a transfusion of 1,200 cubic centimetres of citrated blood had been given by the drip method. During the next twenty-four hours a further large melena stool had been passed, and a further transfusion of 700 cubic centimetres had been given. The tentative diagnosis of duodenal ulcer was borne out by an X ray examination made later. The depleted body fluids had been rapidly replaced, and the uræmia had quickly disappeared, as the patient was able to retain the full diet given to him.

Rheumatic Carditis.

Dr. Herlihy also showed a patient with long-standing mitral stenosis; compensation had broken down. Clinically the cardiac condition was a good example of gross enlargement and auricular fibrillation. An X ray film of the heart shadow and an electrocardiogram were shown for collateral study.

Empyema of the Ureter due to Calculus.

DR. R. J. NIXON showed a female patient who, about eighteen years previously, had undergone left nephrectomy for hydronephrosis. The operation had been performed by Dr. Harry Harris at Lewisham Hospital. She had had two Cæsarean sections, the last being about six years prior to the meeting. On September 30, 1935, she had had a curettage of the uterus, left salpingectomy and puncture of a cyst of the right ovary. On May 3, 1937, adhesions of the small bowel had been freed from the abdominal wall near the nephrectomy wound. The ureter was noticed to be much thickened and was cylindrical in shape.

During the twelve months prior to the meeting the patient had had swelling of the left side of the abdomen, associated with much pain. Attacks occurred every three months at first, but much more frequently in the few months prior to the meeting. During an attack her urine was cloudy and red, "like red mud". About six months before the meeting a swelling had developed near the site of the nephrectomy wound on the left side. This broke down and discharged a large amount of pus.

On July 17, 1938, operation was performed. Examination under anæsthesia revealed a small mass near the left pelvic wall. A left paramedian incision was made. The left ureter was found to be uniformly thickened, and a small stone was felt in the lower end of the ureter, where it widened into a small mass. The ureter was opened by a small incision, pus was liberated and the opening was closed. The ureter was dissected out and ligated close to the vesical junction and below the stone. The wound was closed, glove drainage to the retroperitoneal

space being provided. Convalescence was uneventful. Dr. Nixon said that his thanks were due to Dr. Richard Harris for advice in this case.

Urograms.

DR. RICHARD HARRIS showed a number of urograms to illustrate types of ruptured kidney for which conservative treatment, by repeated hypodermic injections of morphine for the first three or four days, and complete rest in bed for at least three weeks, had been used. A decision as to when open operation was desirable depended on (*a*) the persistence of, and increase in, the amount of hæmaturia, (*b*) the general condition of the patient, (*c*) an increasing pulse rate and (*d*) a rising temperature. He emphasized the importance of examination by excretion urography as soon as the period of shock had passed.

Dr. Harris also showed a urogram illustrating a gross degree of hydronephrosis caused by a calculus impacted in the pelvic portion of the ureter, and another demonstrating the remarkable degree of recovery that was made possible by the relief of obstruction. This patient, he pointed out, had been treated by a number of ureteric dilatations, with subsequent passage of the calculus.

Finally, Dr. Harris showed a urogram depicting almost complete obstruction by a calculus tightly impacted at the uretero-pelvic junction. He also showed the kidney in the same case, which had been removed at operation, and in which structural disintegration and cortical abscesses were seen.

Hydronephrosis.

DR. D. C. TRAINOR showed a female patient, aged fourteen years, who had been admitted to hospital on July 15, 1937. She had had a severe attack of pain in the right loin one week previously. The pain had been stabbing in character and had caused nausea. There had been some frequency of micturition and pain in the loin following the act. Apart from this severe attack of pain there had been an ache in the loin for some time previous to her admission.

The patient was thin and pale. On examination an acutely tender area had been found over the right loin. Urography revealed a normally functioning left kidney. There was no excretion of dye from the right kidney after forty minutes, but the kidney shadow was of normal size. Cystoscopic examination had shown the bladder to be normal. There was good excretion of dye from the left side, but none was seen from the right. A ureteric catheter was passed to the right kidney and purulent urine escaped. The velocity of the flow indicated considerable tension in the pelvis. A pyelogram revealed much clubbing of the calyces. The pelvis was incompletely filled. The catheter was left in position for a week and the urine became much clearer. The secretion of dye from the right side was fairly good after the catheter drainage.

Operation was undertaken on August 18, 1937. The kidney was exposed by a lumbar incision. An abnormal artery and vein were found crossing and kinking the ureter at the uretero-pelvic junction. The vessels were divided. Further dissection showed that the ureter was partially telescoped into the pelvis, as in intussusception. This position was straightened out, and it was found that there was a distinct constriction of the ureter at the uretero-pelvic junction. The constriction was divided longitudinally and the edges were sutured horizontally. A catheter was inserted into the ureter to act as a splint at this point. The pelvis was drained by a nephrostomy tube. Nephropexy was performed and the wound was closed.

The splinting catheter was left in position for two weeks and the nephrostomy tube for three weeks, as the urine was still infected. As the renal sinus had not closed within a few days of the removal of the nephrostomy tube, a ureteric drainage catheter was inserted. The sinus in the loin had closed in a few days.

The patient was discharged on October 5, 1937. Dr. Trainor said that he saw her three months later. She had had no further symptoms, and had put on nearly two stone in weight. The remarkable feature of this case was the number of pathological lesions contributing to the causation of the hydronephrosis.

A urogram made eight months later showed both kidneys to be excreting the solution normally, and the left side of the urinary tract to be free from any abnormality. Some clubbing of the calyces on the right side and dilatation of the renal pelvis were still present. The latter was not nearly so pronounced as at the previous examination.

Renal Calculus.

Dr. Trainor's second patient was a male, aged thirty-four years, who had been admitted to hospital on January 29, 1938. He had typical left renal colic, which had commenced three days previously. He had been relieved at intervals by morphine. The pain was in the left loin and radiated down to the left testicle. There was no pain on micturition, nor was there any great frequency. He had had a similar attack twelve years previously, but had been quite well since then.

Urographic examination showed the right kidney to be functioning normally. There was no excretion on the left side. A large, rounded shadow was seen in the region of the left upper calyx. There was also an elongated shadow 2·5 centimetres (one inch) long and about 0·6 centimetre (one-quarter of an inch) in diameter in the line of the left ureter, in the region of the uretero-vesical junction. Cystoscopic examination showed the bladder to be normal. There was a good excretion of dye from the right ureteric orifice, but none was seen from the left.

An attempt to catheterize the left ureter was unsuccessful and a dilator could not be passed. The obstruction was about 5·0 centimetres (two inches) from the ureteral orifice. Two days after these manipulations the patient began to pass a large amount of gritty material in the urine, and said that his symptoms had disappeared. He decided therefore to leave hospital. He continued to pass this sandy material in considerable quantities. An X ray film taken three weeks later showed that the ureteral shadow had disappeared, with the exception of a very small opacity. The shadow in the renal area had also diminished to one-half its original size. Dr. Trainor said that the patient had reported recently that he was still passing "sand", and that he was feeling quite well. He was not able to come into hospital for further investigation. The nature of these calculi was unusual; but it was unlikely that he would pass them completely, since the last skiagram taken suggested that the kidney contained two stones that seemed too large to pass down the ureter.

Carcinoma of the Bladder.

Dr. Trainor next showed a pathological specimen taken from a patient with carcinoma of the bladder. He was a man, aged fifty years. He had first noticed hæmaturia twelve months earlier; it had lasted for about a week. There had been no further sign of blood till four months before the meeting, when hæmaturia was again noticed. Once more it had not lasted long. It was only in the previous two months that the hæmaturia had been persistent, though intermittent. The blood was at times intimately mixed with the urine; at other times clots were present. Sometimes it was terminal, and at others it occurred at the commencement of micturition. At all times it was painless and was the only urinary symptom.

Cystoscopy revealed a large growth on the right lateral wall of the bladder. It was pedunculated, but it was not easy to see where the pedicle was. At operation the growth was found to be attached by a comparatively narrow pedicle to the lateral bladder wall. The pedicle was doubly clamped and divided between the clamps with a diathermy knife. The base was oversewn. Two contact growths, one on the right-hand side of the bladder floor and the other on the left bladder wall, just to the left of the internal meatus, were destroyed by diathermy. These growths were flat and seemed more malignant than the main growth. The main growth was attached to the mucous membrane. Dr. Trainor said

that it was doubtful whether it had invaded the muscular coat of the bladder.

The bladder was closed and drainage was provided by a urethral catheter. This was removed on the eighth day, and micturition commenced normally. Dr. Trainor said that cystoscopy would be carried out three weeks after the meeting, and would be repeated at intervals, in order that any recurrences might be dealt with.

Renal Calculus and Aneurysm of the Abdominal Aorta.

The fourth patient shown by Dr. Trainor was a male, aged fifty-eight years. He had first consulted an orthopædic surgeon because of pain in the back. The lumbar region was examined radiologically, and as a large renal calculus was found he was referred for urological investigation.

The radiologist's report was as follows:

> There is a large staghorn calculus forming a complete cast of the pelvis and calyx system of the right kidney. The lateral skiagram shows some erosion of the first and second lumbar vertebral bodies. This could be due to pressure of an aneurysm of the abdominal aorta. There is lipping of the margins of the vertebræ.

The pain had been present for some time, but had become worse during the five weeks before the patient's admission to hospital. It was aching in character and radiated down towards the buttocks. There was no tenderness on palpation. The patient stated that he had been treated for an aneurysm of the arch of the aorta some years previously. There were no radiological signs of this lesion. He was very breathless on exertion, his feet were swollen, and he suffered from attacks of dizziness. His blood serum failed to react to the Wassermann and Casoni tests. A blood count revealed no abnormality.

Dr. Trainor said that a physician had considered the patient unfit for any operative procedure on account of his cardiac disability. No further urological investigation was made, particularly as the erosion of the vertebræ was considered to be probably aneurysmal. The radiologist, however, could see no evidence of pulsation on examining this area by fluoroscopy. It was considered that the pain was due to the pressure on and erosion of the vertebræ rather than to the calculus.

Radial Palsy.

DR. R. V. GRAHAM showed three patients with radial palsy. The first was a child, aged twelve years, who had sustained a fracture of both bones of the forearm. The limb had been immobilized by means of anterior and posterior splints. During treatment, in an effort to correct angulation, pads of sponge rubber were applied between the anterior splint and the line of fracture, and between the posterior splint and the region of the elbow joint. Within two days it was noticed that the patient could not dorsiflex his wrist or extend his metacarpo-phalangeal joints. The splints were removed, and the fracture was immobilized in a plaster slab placed on the anterior surface of the limb. Gradual improvement was noticed; but full recovery did not occur for approximately three months, the bones in the meantime being soundly united in good position.

Dr. Graham's second patient was a miner, who had sustained a fracture of the middle of the shaft of the humerus about seven weeks earlier. The fracture had not been completely reduced, although the axial position was good. When he sought advice, on account of a gradually progressing radial palsy, the humerus was already firmly united, a large mass of callus being present on the posterior aspect at about the junction of the lower and middle thirds. At operation it was found that the radial nerve was stretched over this exuberant callus and was adherent to the distal portion of it. A few days after operation it was noticed that the power of dorsiflexion of the wrist was beginning to return. A week later the patient was able to get minimum movements of the extensors of the metacarpo-phalangeal joints and wrist.

The third patient shown by Dr. Graham was a slaughterman, aged thirty-one years. His right arm and shoulder girdle had been caught in a conveyor belt six months previously. A fracture of the shaft of the ulna and extensive abrasions and contusions had occurred, with subcutaneous hæmorrhage in the right arm and shoulder and posterior aspect of the right side of the thorax. The fracture had united, but the patient still had paralysis of the extensors of the wrist and of the metacarpo-phalangeal joints of the fingers and thumb. This was gradually decreasing, as was the anæsthesia in the distal part of the first interosseous space.

Compound Fractures of the Leg.

Dr. Graham also showed three patients who had sustained compound fractures of both bones of the leg. They had been treated within a few hours of injury by *débridement*; the depths of the wound had been flushed with a 1 in 2,000 solution of acriflavine, the fragments had been levered into position, and the wound had been completely closed and the limb had been immobilized in a plaster cast. In each instance primary union had occurred in the skin and good union was occurring in the bones.

Dr. Graham next showed a patient who had sustained a compound comminuted fracture involving the ankle joint, in which the lower end of the tibia had been fractured into three fragments in a vertical direction, the middle fragment being pushed proximally by the talus for about 1·9 centimetres (three-quarters of an inch). After two attempts to reduce the fracture by traction, an open operation was performed; the three fragments were levered into position, so that the articular surface showed an even contour, and a transverse wire was passed through a drill hole in the three fragments to hold them in position. The patient had been able to return to work three months after the injury, with slight limitation of dorsiflexion at the ankle joint.

Another patient had sustained a fracture of the posterior edge of the inferior articular surface of the tibia, with posterior subluxation of the ankle joint. After reduction of the fracture the limb had been immobilized in plaster extending from just below the knee to the heads of the metatarsals, with the foot in full dorsiflexion at the ankle joint and midway between inversion and eversion. A horseshoe-shaped piece of plaster had been removed from the dorsum of the foot of the plaster case to allow for active dorsiflexion, but plantar flexion was prevented by the plaster case.

Cystic Condition of the Ilium.

Dr. Graham also showed a female patient, aged forty-eight years, who had complained of pain in the region of the right hip joint of three years' duration. The pain was worse at night and was aggravated by use; she had been compelled to use crutches for six months before her admission to hospital. On examination a mass with ill-defined borders was found deep in the right iliac fossa; it appeared to be attached to the ilium. X ray examination revealed general enlargement of the whole of the ilium, with many small cystic spaces surrounded by bony trabeculæ. There was no periosteal reaction, and the mass did not encroach on the sacro-iliac joint or acetabulum. The appearance of the skiagram suggested an osteoclastoma or hydatid infection. There was no reaction to the Casoni test or to the complement deviation test. The blood count revealed no eosinophilia; there were 3,500,000 erythrocytes and 9,350 leucocytes per cubic millimetre, and the hæmoglobin value was 68%. In view of the absence of positive findings a biopsy was performed. It was found that portions of the ilium were replaced by a yellowish form of granulation tissue, and that the cystic spaces contained a semi-oily material; but no true cysts were found. A microscopic examination revealed no hooklets. Examination of microscopic sections revealed a peculiar well-staining matrix in which several foreign-body giant cells were present, and many cholesterol

crystals could be seen. In one portion of the area removed laminated membrane was found. There was no response to a further Casoni test or to the complement deviation test, carried out again on July 12, 1938.

Arthrocatadysis.

DR. NORMAN LITTLE showed a female, aged sixty years, suffering from arthrocatadysis. She had come to the hospital with all the symptoms of advanced osteoarthritis of the right hip joint. The provisional diagnosis of osteoarthritis was made until the X ray film was examined. This revealed a pronounced diminution of joint space and intrapelvic protrusion of the acetabulum. The head of the femur appeared to be engulfed in this deepened acetabulum. Dr. Little pointed out that the condition was one of the recognized types of Otto's pelvis, of which there were two. One of these was probably of congenital origin and was due to some disturbance in the triradiate cartilage that helped to form the floor of the acetabulum; there was apparently a softening of the cartilage and contiguous bone, which allowed the femoral head to force the floor of the acetabulum upwards and inwards into the pelvis. Dr. Little stated that symptoms of this congenital type of Otto's pelvis did not become apparent until about puberty, when the patients, all of whom appeared to be females, complained of disability when sitting down or when attempting to cross the legs. On examination at this stage the only free movement at the hip joints was flexion through a range of about 70°. As the condition progressed even this movement became limited, and osteoarthritic changes were generally noticeable at about the age of twenty-five years. The other type of the condition was apparently infective in origin, and the patient shown came within that category. The loss of joint space and the osteosclerosis shown in the skiagram were evidence in favour of infection as the cause of the condition. Dr. Little said that Poncet attributed the changes to the toxins of the tubercle bacillus, while in some cases the disability had been known to occur during the course of a Neisserian infection. Dr. Little said that he considered that the disorder was a manifestation of osteoarthritis in some cases. When the present patient was first seen she had had practically no movement at the right hip joint. The only treatment given had been diathermy and plenty of rest. At the time of the meeting flexion was limited to 75°, rotation to a few degrees only, but abduction and adduction were completely absent, while the amount of flexion deformity at the hip was only 30°. Dr. Little said that if the patient's disability should become more pronounced and make her life a misery, he would suggest the performance of a displacement osteotomy of the upper end of the femur.

Spontaneous Rupture of the Long Head of the Biceps Tendon.

Dr. Little's second patient was a female, aged fifty-six years, who had awakened one morning and found her left shoulder stiff, swollen and painful. She had reported at the hospital ten days later, when pronounced bruising was present, as well as the other symptoms in the region of the shoulder. At this time the rupture of the long head of the biceps muscle had not been noticed, and an X ray examination of the joint had thrown no light on the cause of the symptoms. The arm had been placed on an abduction frame and left there until it could be raised with ease; the period was actually six weeks. After the removal of the frame it had been noticed that the belly of the left biceps muscle was more distal than that on the other side. The patient said that she was absolutely certain that she had not injured herself in any way, unless she had done some damage to her limb during her sleep. Dr. Little remarked that his last patient with a spontaneous rupture of the long head of the biceps muscle was a woman, aged twenty-six years. Subsequently a tuberculous infection of the shoulder joint had developed. In the present case the shoulder joint appeared perfectly healthy and the only disability was some limitation of external rotation. This caused the patient some inconvenience in certain acts, one of which was the putting up of an umbrella. Dr. Little said that he proposed to restore the lost movement by means of manipulation, if it did not return shortly with massage and passive movements. He remarked that the site of rupture of the tendon in this case could be judged to be well up in the joint. The evidence in favour of this was the hæmarthrosis the patient had had when she first presented herself. At the time of the meeting the only clinical evidence of the lesion was the displacement distally of the outer head of the biceps muscle, when the patient contracted the muscle against resistance. There was no sign of the egg-like tumour so frequently seen when the tendon was ruptured by some violent action. Dr. Little said he did not think that much disability followed this accident; but he advised suture of the tendon if the tumour or displaced muscle belly was going to be a source of worry to the patient.

Sciatica.

Dr. Little's last patient was a female, aged forty-two years, who had suffered from low backache with secondary sciatica for ten years. She had tried every conceivable type of treatment without any benefit, and life had become a burden. In desperation, Dr. Little had applied a plaster jacket, which extended from the lower angles of the scapulæ to the third sacral vertebra; but it had been applied with the patient leaning forward on a table so that the lumbar curve was obliterated. Two days after the application of the jacket the backache and telalgia had disappeared. The jacket was left on for eight weeks, and then removed. Within a week the pain had returned. A brace was then made in such a manner as to obliterate the lumbar curve. The patient had been wearing this for nine months, and there had been no sign of return of the trouble. Dr. Little pointed out that the method of treatment was purely mechanical. By obliterating the lumbar lordosis he was opening the intervertebral foramina slightly and allowing more room for the roots of the sciatic nerve. He said that he had tried the method in twenty other cases and in only one of them had he met with failure. That patient was a young man, aged twenty years, who at the time of the meeting was being investigated for a *nucleus pulposus* herniation. In some of the cases there had been X ray evidence of spondylitis. In most of them, however, the X ray films had revealed no abnormality, and two of the series were cases of sciatic scoliosis. Dr. Little said that if the symptoms recurred after the removal of the plaster jacket the patient was sent to the instrument mechanic to have the brace made. This had been necessary in three cases.

NOMINATIONS AND ELECTIONS.

THE undermentioned has applied for election as a member of the South Australian Branch of the British Medical Association:

Wilson, Robert Kevin, M.B., B.S., 1937 (Univ. Adelaide), Renmark Avenue, Renmark.

The undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Alexander, Kenneth Wakeford, M.B., B.S., 1937 (Univ. Sydney), 16, Ormonde Parade, Hurstville.

Colvin, Gordon Stirling, M.B., B.S., 1937 (Univ. Sydney), Tamworth.

Newell, John Alexander, M.B., Ch.B., 1891 (Univ. New Zealand), 8, South Avenue, Double Bay.

The undermentioned has been elected a member of the New South Wales Branch of the British Medical Association:

Jones, Gordon Richard, M.B., B.S., 1937 (Univ. Sydney), "Clarence House", South Grafton.

Proceedings of the Royal Commission Appointed to Inquire into Matters Pertaining to National Health Insurance.

Monday, December 5, 1938.

The sittings of the Commission in Sydney were resumed on Monday, December 5, 1938.

Sir George Mason Allard: I much regret to have to inform you that, owing to an indisposition, His Honour Chief Judge Dethridge will not be with us today, and possibly not this week. He hopes to be here to hear the addresses of counsel next week. I am sure you are with me in hoping that he will be with us before the end of the week.

Mr. Dovey: Yes, we very much regret it. I gather from what you have said, Sir George, that it is desirable to proceed with the evidence.

Mr. Weston: Before evidence is called, there are one or two matters to which I wish to refer.

At page 1578 of the notes of the evidence I am reported as having said that Dr. Embelton would be appearing as an independent witness and he would not be representing the views of my clients. What I said was that his views would not necessarily represent the views of my clients.

There is a further passage relating to the same topic appearing at the top of page 1592. I am there reported quite correctly to have said this: "Dr. Embelton is passionately interested in the matter, and he seems to think he has a mission to perform."

It appears that in some quarters the statement that he seems to think he has, or that he has in fact, a mission to perform is regarded as inaccurate. Therefore, it must be taken as my expression of the view of the circumstances. It has also been found of some importance that my remarks were taken to be disparaging; but if anyone heard the tone or the manner of my saying it, he would know that it was not so. I did not intend for a moment to disparage Dr. Embelton in any way, and if that impression has been created, it has simply been a mistaken impression.

Finally, as counsel for the Federal Council, I want to say that Dr. Embelton's views do not necessarily represent those of the profession generally, but he was asked by the Council of the Victorian Branch of the British Medical Association to make a study of national insurance in relation to the medical provision, and he has given considerable time to that study.

Dr. David Moore Embelton, of Essendon, Victoria, was examined by Mr. Dovey.

Mr. Dovey: You have held a number of offices in the councils of the British Medical Association, and I think you are a member of the Council of the Victorian Branch?

A.: I am.

Q.: You have, I understand, given a very great deal of thought to the problems of national insurance, as you understand them to affect the medical profession?

A.: Yes.

Q.: And you now desire to offer your views on one or more of the terms of reference to this Royal Commission?

A.: Yes. In reference to that, might I make my position clear? In 1926, you will remember, the Royal Commission on national insurance sat and submitted reports. We were asked at that time to take an interest in national insurance from the medical point of view. In 1928 a bill was before the Federal Parliament, and we did take an interest in it, and although there were no medical provisions in that bill, we tried to educate the profession to the attitude they should take of the position in relation to national insurance. Our activities went on till 1935, when I more or less dropped out of medical politics. I want to make it clear that I come before this Commission at the request of the profession, particularly the Victorian Branch, and that I have had a very active share in the preparation of the case for the Federal body, but I am not appearing as a witness called by the counsel for the Federal body, because in relation to Reference VI, the Federal body has no coordinated view, and therefore no evidence to offer. But as far as the Victorian Branch is concerned, they endorse the views set forth in my memoranda, and they expressed the wish to the Federal body that I be asked to give evidence before the Commission.

I wish it to be made clear that I am not giving evidence in spite of, but at the request of, the medical profession.

Copies of the lengthy memorandum and appendices prepared by Dr. Embelton, relating to number VI of the terms of reference, were handed to the Commission, and Dr. Embelton proceeded to read and explain the proposals therein set forth. These proposals are largely based upon the scheme operated in England by the National Deposit Friendly Society.

Dr. Embelton concluded his statement relating to number VI of the terms of reference, and it was decided that he should give his views concerning number I of the terms of reference on the following day.

Mr. Harold Green, one of the members of the National Health Insurance Commission, was recalled for further examination upon statistical matters. Mr. Green was cross-examined by Mr. Weston with reference to the statistics that he had produced in Melbourne and with reference to the sample of friendly society members prepared in Victoria by the British Medical Association. Mr. Green stated that he thought the statistics produced by him in Melbourne were a better guide to the average weighted capitation fee for married male members of friendly societies throughout Australia than the figure of 27s., which had been arrived at in the early discussions.

Further cross-examination related to the manner in which the figure of 3·2 for the friendly society member's family unit was arrived at and to the validity of the criticisms made by Mr. Gawler upon the sample prepared by the Victorian Branch of the British Medical Association.

The Commission adjourned at 4.25 p.m. until Tuesday, December 6, 1938, at 10.30 a.m.

Tuesday, December 6, 1938.

Mr. Green made certain corrections to the transcript of his evidence and then was further cross-examined upon statistical matters by Mr. Weston. Mr. Green was also cross-examined by Mr. Williams.

Dr. D. M. Embelton was further examined. Dr. Embelton read and explained his memorandum and accompanying appendices relating to number I of the terms of reference. After dealing with general considerations, Dr. Embelton proceeded with the argument by which he deduced the capitation fee that would be required from a consideration of the award of the Federal Public Service Arbitrator for practitioners employed in the public medical service.

Mr. Dovey: At the adjournment I think you were about to proceed with that portion of your memorandum under the heading "Capitation Fee"?

A.: Yes. A doctor employed full time on insurance practice should be able to make a reasonable livelihood without having to resort to some outside specialty or service to meet his obligations. The net income is that on which he lives and maintains a desirable standard of culture and suitable companionship for himself and family free from financial difficulties of a serious nature. Anything less than this will tend to reduce the efficiency and quality of men who enter the medical profession. It is a matter about which in public interest there can be no question. The greatest contribution the doctor can bring to his patient is one of goodwill. Any system which will create in the medical profession a feeling of depression engenders antagonism, to the detriment of the patient and the welfare of the community. There is a great deal of misunderstanding concerning the rate of remuneration of

doctors. I mean that in a public way. Gross income is assumed to be net income. Often no consideration is given for the long irregular hours, isolation, necessity to relinquish practice in one place in order to take a year's rest and refresher course before he resumes practice in another, the length of time and the capital involved in graduation and the large house he has to occupy, saleable only to a limited medical clientele.

The family physicians in Melbourne alone provide consulting and waiting rooms and extra accommodation for staff, so that someone is on duty on the doctor's premises 168 hours a week to answer the telephone, to the capital value of £350,000 as a minimum.

The capitation fee should be sufficient to return to the doctor working full time on insurance an annual net remuneration equal on the average to that received by a practitioner employed in the public medical service. The number of people in Victoria divided by the number of family physicians is about 1,800, so that if a family physician attains full-time physician service treating 2,300 people his efficiency and popularity are probably establishing his value to the community, and that is the real efficiency bar which he must pass to reach full salary.

Mr. Dovey: "Family physician" is a synonym for general practitioner?

A.: Yes. In the Federal Arbitrator's award the efficiency bar commences at £852 between the salary £708 to £948, which is the maximum recommended.

Mr. Windeyer: What does that mean?

A.: He has to do some course in public health or do some special work to graduate.

Q.: He has to have some special qualification to get more than £852?

A.: To do some special work.

Mr. Dovey: In the light of what you say, is it your suggestion if the practitioner were engaged full time on insurance work that his remuneration should increase from year to year, and therefore the capitation fee should be increased from year to year in relation to the experience of the doctor?

A.: The experience of the doctor determines the number of patients he has, and the patients he has determines his income.

Q.: You mean it should determine the number of patients he has?

A.: It does in a broad sort of way. In a broad sort of way it determines his efficiency in the work he does. The salary available for service to a full complement of patients should be the maximum salary. In the Public Medical Service Federal Arbitrator's Determination number 23, 1926, the salary 1926—£708 to £948 *per annum*—is recommended. Efficiency bar at £852. The Federal Public Service medical officer is called upon to work 36¾ hours a week spread over five days a week.

Mr. Dovey: Is this taken from the award?

A.: Yes.

Mr. Windeyer: There is no copy of the award in court?

A.: No, I have a copy of what was taken from the award. I have not seen the award, but I understand the matter I have was copied from the award by the secretarial staff of the association. He is allowed public holidays and has no night work, as opposed to the family physician—seven days a week on duty, on call for 168 hours in the week, no clear Saturdays, Sundays or public holidays, and no sick leave. It is assumed that the Federal Arbitrator took into consideration when making the award the cost of medical training, which would be redeemed by a sinking fund of £143 *per annum* over a period of twenty years after graduation. In view of all these considerations it is proposed to add 33% to the salary. The age at which a family physician must slacken off is much earlier than in the public medical service, for the life is a very much more arduous one. The tendency is to create oppressive conditions for purposes of economy, so that those employed on family physician service seek to escape as early from it as possible, while on the other hand the P.E.P. Report (that is, the Political and Economic Plan Report) indicates it is the pivot of the national medical machine.

	Public Medical Service.	Family Physician.
Salary Arbitrator Award, 1926, number 23	£948	£1,264
Superannuation at 5½%	52	52
Long service leave, six months in 20 years, 1¼ weeks *per annum*	23	23
Recreation leave, three weeks	54	54
Net income	£1,393 0 0	
Practice capital outlay for purchase of goodwill and equipment not usually allowed in overhead expenses, not being deductible from income tax at 5%. He would otherwise be receiving interest at 5%, average amount of money involved, £1,250	62 10 0	
Overhead expenses must be added. This has got to be paid before he gets any net income. (The actual figure will be demonstrated by analysis of practices)	600 0 0	
	£2,055 10 0	

Number of visits or consultations per day of eight hours payable by the doctor at 20 minutes per consultation or visit = 25.

I asked some practitioners, who did a very good type of work, what they thought was the number of patients they would see on a fair average day, and they said 25 on a good day, 30 on a hard day, and 40 was a day that it was impossible to continue at. They said that 25 patients would take them eight hours. Twenty-five to thirty visits and attendances take 10 to 11 hours; 30 to 35 visits and attendances make a hard day; 40 visits and attendances per day cannot be continued.

The number of visits and consultations per year per insured person would seem to be a reasonable minimum of 3·5. Allowing 25 visits per day, 313 days per year, 7,825 visits and consultations would be a hard year's work, and these services would be spread among 7,825

$$\frac{7{,}825}{3{\cdot}5} = 2{,}236 \text{ persons.}$$

Mr. Dovey: Do you know Dr. Cockerill?

A.: Yes, I know him quite well.

Q.: He is a healthy looking man, is he not?

A.: Yes.

Q.: Do you know that he gave 19,000 services to lodge patients in a year, apart from his private practice?

A.: I did not know he had so many lodge patients.

Mr. Dovey: Well, he swore that.

The Witness (continuing his statement): It was indicated that the number of insured persons who could reasonably be cared for, working full time (48 hours a week), would be 2,236 persons. These must provide £2,055 10s.

£2,055 10s. divided by 2,236 = 18·38s.

There are a number of extra services in the scope imposed on the insurance practitioner which the family physician in Australia is not required to do, as follows:

(1) Keeping records according to method prescribed.

(2) Certification—on, progressive, and off.

(3) Extra visits on account of necessity for certification. (Certification does not apply to dependants of lodge members.)

(4) Arranging surgery hours to suit the National Insurance Commission. It raises obligations, difficult perhaps to fulfil, in peak periods.

(5) Notifying the Commission regarding (*a*) being away from home, (*b*) name of relieving officer, (*c*) carrying on practice at a branch surgery.

(6) Arranging for inspection of records by regional officers.

(7) Referring patients to regional officers with complete history. This responsibility is increasing in England.

(8) Furnishing prescriptions for the purpose of the scheme of testing drugs and appliances.

There are additional services outside the scope which the physician must perform in the interests of the patient; for instance, visiting surgical cases operated on by specialists in hospitals, not public hospitals; consultations over the telephone—a much more ample service in Australia than in any other country in the world. Ringing up public hospitals to arrange admission for patients requiring hospital nursing care. It may take us as long as one or two hours on the telephone ringing up all the hospitals twice in one day or on successive days before arrangements can be made. Making arrangements for surgical operations, coordinating times of consultant, hospital and anæsthetist.

None of these, and many other contingencies, have been included in the figure 3·5.

The age of the population is increasing; 500,000 people over forty years of age are now being admitted to the scheme. The age incidence and sickness incidence will steadily increase.

The extra amount due to be added in regard to these extra services within the scope is difficult to assess, but a reasonable amount would be 1·62s., raising the capitation fee to 20s.

Mr. Dovey: Before I ask the doctor any questions I would, with the permission of the Commission, like to say how much we appreciate the vast amount of work in the nature of research and inquiry which is apparent in these memoranda which the doctor has placed before the Commission. I also appreciate the very great care with which he has tabulated the matters he has propounded here, that is, without necessarily agreeing with the conclusions at which he arrives.

Mr. Weston: May I also associate myself with those remarks.

Dr. Embelton was then cross-examined by Mr. Dovey upon his memoranda and was further cross-examined by Mr. Williams. Mr. Williams's cross-examination related to term VI. Dr. Embelton then withdrew.

The Acting Chairman: I should like to express, on behalf of the Commission, its appreciation of the work you have put into this matter and the way you have presented it to us.

At 4.15 p.m. the Commission adjourned until Wednesday, December 7, 1938, at 11 a.m.

Wednesday, December 7, 1938.

Mr. R. N. Cadwallader was examined by Mr. Dovey. Mr. Cadwallader, as accountant assisting the Commission, produced a number of schedules, which were tendered as exhibits. In the schedules there is presented in tabular form the confidential evidence of those medical practitioners for whom confidential exhibits had been tendered, together with certain calculations therefrom. Mr. Cadwallader explained the schedules to the Commission and made certain comments on the matters disclosed therein. His cross-examination was postponed until the following day in order to allow counsel for the British Medical Association to examine the schedules and Mr. Cadwallader's comments in detail.

At 12.45 p.m. the Commission adjourned until Thursday, December 8, 1938, at 10.30 a.m.

Thursday, December 8, 1938.

Mr. R. N. Cadwallader was cross-examined by Mr. Weston regarding the schedules prepared by Mr. Cadwallader and with special reference to the criticisms made by Mr. Cadwallader of the method of computation of the loss of private practice adopted in the document, known as the confidential exhibit, prepared in respect of each witness called by the British Medical Association.

After re-examination by Mr. Dovey the witness withdrew.

At 12.25 p.m. the Commission adjourned until the following day, Friday, December 9, 1938, at 10.30 a.m.

Friday, December 9, 1938.

Dr. Hugh Hunter, Assistant Secretary of the Federal Council of the British Medical Association, and Acting Medical Secretary of the New South Wales Branch, was examined by Mr. Weston. Dr. Hunter produced certain tabulations compiled from the yellow *questionnaires* for New South Wales which were tendered as exhibits.

Dr. Thomas Arthur Price, of Toowoomba, was examined by Mr. Dovey. Dr. Price is a member of the Council of the Queensland Branch of the Association and is also a member of the Federal Council.

Mr. Dovey: You have indicated that you would like to state the reason for your appearing to give evidence as an independent witness?

A.: The statement I wish to make has, I think, very definite relation to the national health insurance scheme of the Federal Government, and it is a statement that has been prepared by the Queensland Branch, but has not been considered by the Federal Council, and therefore I cannot give the views of the Federal Council.

Q.: You have read the notes of the proceedings, the discussion between the representatives of the medical profession and the Government in Melbourne and in Sydney as set out in the printed notes of Mr. Brigden, have you not?

A.: Yes.

Q.: I take it you agree that that record is an accurate one in substance?

A.: I do not think so.

Q.: You do not think so?

A.: No.

Q.: You will appreciate that this Royal Commission is appointed to inquire into certain specific matters set out in the terms of reference. You have seen those terms of reference?

A.: Yes.

Q.: You will appreciate that none of those terms of reference touch in any way the policy of the Parliament of the Commonwealth or of the executive government of the Commonwealth—you appreciate that?

A.: Yes.

Q.: And I suppose you further appreciate that it would be impertinent for any member of this Commission as such to offer any criticism here of such policy?

A.: I would not say that it was impertinent at all. I do not know. I do not know enough about the law for that.

Q.: I would ask when we go through this document, subject to any direction of the Commission, that you refrain from offering any criticism whether it be approbation or disapprobation of the policy of the Government.

Dr. Mulvey: You mean the Commonwealth Government, Mr. Dovey?

Mr. Dovey: Yes. I see what is in your mind, Dr. Mulvey. I will make my point more clear to Dr. Price. You were in Queensland when some observations were made by a permanent officer of the Health Department in Queensland. If you have anything to say in the way of answer to what he put before the Commission we will be only too happy to receive it; but so far as the policy of the Government of the Commonwealth, which has brought this *National Health Insurance Act* into being, is concerned, we cannot in this tribunal offer any criticism either for or against?

A.: The statement that I am making here on behalf of the Queensland Branch is an attempt to assist the Federal Government to bring in what we consider a good national health insurance. It is an elaboration of the Federal policy, the main principles that should lie behind the Federal policy for a general medical service for Australia, which was sent to the Prime Minister on August 31, 1936. This document is an elaboration of that.

Mr. Dovey: The Commission will appreciate the difficulty. It seems to me we will be quite wrong to embark on any criticism whether it be intended to assist the Government or to embarrass the Government.

The Chairman: Glancing through the statement I find there is a lot of matter here concerning the policy of a national health service. Is it possible that that is just leading up to a suggestion as to how the doctors' remuneration shall be regulated? I do not think you need worry about comments on the matter of policy of the national insurance at all.

Mr. Dovey: Dr. Price will understand I am not making any reflection on him personally, I am quite ignorant of what is in this document. One can envisage this, that if some irresponsible person came along to this Commission and chose to get off his chest, to use a commonplace expression, a lot of criticism of the Government, that would be a very wrong thing. Everything that is said here is said under the cover of privilege. This Commission is not at all concerned with an inquiry of that sort, and that is the only reason why I have asked Dr. Price to keep off any matter of policy. I am not suggesting that anything Dr. Price might say will not be of considerable interest to the Federal Government, but all we are entitled to receive in evidence is matters which are in some way concerned with the points of reference.

Dr. Mulvey: One cannot give a ruling on this matter unless one is aware of what is coming.

Mr. Dovey: I am not asking for a ruling. I understand the evidence Dr. Price wishes to give is a reply to some of the evidence given by a doctor in Queensland, the Under-Secretary to the Department of Health. The aim in Queensland, I understand, is to bring about hospitalization of all services, and Dr. Price is diametrically opposed to that point of view. He considers that a general practitioner should be retained as a family doctor. That I understand is his view, and he wishes to propound that view, too, and assist the Commission in that regard, as indeed it will, as the terms of our Commission are in relation to the work of the general practitioner, and the right of the individual to choose his own practitioner to carry on the service. I understand that is what you have in view, Dr. Price?

A.: I have in view that a proper health service will be diametrically opposed to what the Under-Secretary in Queensland wishes to bring about in Queensland, that is a purely specialized institutional service to replace the private practitioner.

The Chairman: That we are not concerned with.

Dr. Price: It is diametrically opposed to the Federal policy, and to the policy of the Queensland Branch of the British Medical Association. This statement is just a little expansion of those principles which have already been sent to the Federal Government over two years ago, and have been published in the medical Press over a longer period. It is merely an explanation of the reason why there should be a good general practitioner service, completed by the addition of specialists and institutional services, but that the foundation should be what the Federal Government is proposing—a general practitioner service.

Dr. Price then read his statement. This dealt with the position of the general practitioner and suggested certain elements that he considered would be desirable in the service to be provided under the national health insurance scheme. Mr. Dovey criticized the statement on the ground that it dealt with matters of policy and not with matters that, under the terms of reference, were the concern of the Commission.

The Witness: There is one other point I would like to deal with. I want to emphasize the amount of post-graduate work that the British Medical Association has done right throughout Australia in each State. I have here the medical course for graduates issued by the University of Sydney which is carried out with the cooperation of the British Medical Association. The British Medical Association branch in each State undertakes courses of post-graduate study for qualified men, and I think it is extremely important that medical men with practices should for three years or so attend courses in post-graduate work. I think that it is extremely important for two reasons, firstly, particularly in the country, and also in the town, medical men tend to be isolated in a great way from the general trend of medicine and get anchored in a practice in which they might be. It is very important, I think, that men who are doing any special work should have their ideas brought up to date and to refresh themselves professionally in their work. I think every medical man who has had anything to do with the profession puts post-graduate work in a very important place in the activities of the profession. I think the Commission would be quite within their rights in considering that post-graduate work should be considered when they are arriving at an answer to Reference I. I simply want to emphasize that and I have here my own card showing the activities of the British Medical Association in Queensland. If you look at that, you will see that the great bulk of their meetings are clinical, and there are no political questions at all. The great bulk of the work is clinical for the benefit of the profession in keeping them abreast of the times and giving them the benefit of other experienced practitioners.

Mr. Williams: Before I ask any questions I understand that it is not desirable to ask any with respect to any part of this document.

The Chairman: I do not think so. There is practically nothing in this document which bears upon the terms of the Commission. We only want to deal with matters referred to in our Commission. (To witness): Dr. Price, this is a most interesting paper, but nevertheless it does not come within the terms of our inquiry.

A.: All I can say is, I am very sorry.

Dr. Mulvey: At the same time, doctor, you have expressed there some very valuable ideas which I think will assist the Commission when they are deliberating their decision.

Mr. Dovey: I think the Commission may take it that the evidence should finish on Monday. Mr. Brigden will be here on Monday, and I am doubtful that his evidence will take the whole of the day. There is one other small piece of evidence that I propose to tender; it is not available at present.

At 11.50 a.m. the Commission adjourned until Monday, December 12, 1938, at 11 a.m., at the Equity Court, Sydney.

Post-Graduate Work.

RESIDENTIAL COURSES IN OBSTETRICS.

THE New South Wales Post-Graduate Committee in Medicine advises that a residential course in obstetrics will be held at the Women's Hospital, Crown Street, Sydney, and that a similar course will be held at the Royal Hospital for Women, Paddington, from January 7 to 14, 1939.

These courses are essentially practical and have been designed primarily for those who, since graduation, have served in general hospitals without obstetric beds, and who desire to renew their acquaintance with the art of obstetrics prior to going into general practice or acting as *locum tenentes*.

Eight graduates can be accommodated at the Women's Hospital, Crown Street, and provision for nine can be made at the Royal Hospital for Women. Applicants are requested to state at which hospital they would prefer to reside. Applications will be dealt with in order of precedence, and as soon as the quota for either hospital is reached, applicants will be allotted to the other institution.

The programmes are set out below.

The Women's Hospital.

Sunday, January 8.

Morning.—Introduction and allocation of patients: Dr. T. Dixon Hughes.

Afternoon.—"The Care and Feeding of Infants": Dr. Selwyn Harrison.

Monday, January 9.

Morning.—"Clinical Pathology and Biochemistry, as Applied to Obstetrics": Dr. E. B. Durie.

Afternoon.—"Diagnosis and Treatment of Disproportion": Dr. A. J. Gibson.

Tuesday, January 10.

Morning.—"Prevention and Treatment of Obstetric Shock": Dr. T. Dixon Hughes.

Afternoon.—"The Use of X rays as applied to Obstetrics": Dr. D. G. Maitland.

Wednesday, January 11.

Morning.—"Diagnosis and Treatment of Vaginal Discharge in Pregnancy": Dr. A. Grant.

Afternoon.—"Analgesia in Labour": Dr. F. A. Bellingham.

Thursday, January 12.

Morning.—"Delayed Labour": Dr. R. M. Bowman.

Afternoon.—"Medical Complications associated with Pregnancy": Dr. R. Jeremy.

Friday, January 13.

Morning.—"The Use and Abuse of Endocrines": Dr. S. D. Meares.

Afternoon.—"The Toxæmias of Pregnancy": Dr. R. B. C. Stevenson.

Saturday, January 14.

Morning.—"Puerperal Sepsis": Dr. J. N. Chesterman.

The Royal Hospital for Women.

Saturday, January 7.

Post-graduates enter into residence.

Sunday, January 8.

10 a.m.—Graduates welcomed by the supervisor. The course will be explained and individual wishes ascertained and considered.

10.30 a.m.—"Ante-natal Care, Palpation and Mensuration of Pelvis": Professor J. C. Windeyer.

Monday, January 9.

9 a.m.—"Indications for and Technique of Vaginal Examination": Dr. Gordon Lowe.

2 p.m.—"Indications for, and the Technique of, the Application of Obstetric Forceps": Dr. H. A. Ridler.

Tuesday, January 10.

10 a.m.—"Treatment of the Various Types of Abortion": Dr. Bruce Hittmann.

3 p.m.—"Diagnosis and Treatment of Breech Presentations": Dr. F. Brown Craig.

Wednesday, January 11.

9 a.m.—"Treatment of *Post Partum* Hæmorrhage": Dr. P. L. Hipsley.

2 p.m.—"Delayed Labour: Its Causation and How to Treat It": Dr. Ida B. Saunders.

Thursday, January 12.

9.30 a.m.—"Pregnancy Complicated by Disease of the Kidney": Dr. Thomas Small.

2 p.m.—"The Diagnosis and Treatment of Persistent Occipito-posterior Presentation": Dr. Bruce Williams.

Friday, January 13.

10 a.m.—"Treatment of *Ante Partum* Hæmorrhage": Dr. George Stening.

Demonstrations of Pathological Specimens: Dr. A. H. Tebbutt.

"Puerperal Infection": Dr. A. H. Tebbutt.

Ward rounds will be arranged at times to be announced later.

Fees.

The fee for the course will be £5 5s. Applications, which should be accompanied by the fee, should be made to the Secretary, New South Wales Post-Graduate Committee in Medicine, the University of Sydney.

Correspondence.

MEDICO-LEGAL RISKS IN MEDICAL PRACTICE.

SIR: I should like an opportunity of replying to the criticism of my address on "Medico-legal Risks in Medical Practice", by Mr. J. G. Norris, Acting Honorary Secretary of the Committee of Counsel, Melbourne, and of elaborating the series of events in regard to the recent rejection by the Victorian State Parliament of the new rules of the Supreme Court. Circumstances have forced me to a more exact knowledge of the effect of the present rules of procedure upon claims against medical practitioners than is obviously possessed by the Acting Secretary of the Committee of Counsel.

In briefly narrating the sequence of events I made no claim or suggestion that the new rules of procedure arose from representations of the medical profession.

In the passage quoted from my address by Mr. Norris, my first reference was to a previous address delivered by me in 1936 before the Medico-Legal Society on "Doctors and the Law". The intent of this address was to draw attention to the disabilities of medical practitioners in claims at law under the twenty-year-old and out-of-date rules of the Supreme Court. Although the address was deliberately provocative, it had a courteous and even a sympathetic reception from some eminent legal members of the society. It certainly gave an effective opportunity for the ventilation of a grievance before leading members of the Bench and Bar who are well disposed towards a sister profession, which was possible in no other way.

Just before the close of the session of the State Parliament last year (which was of course subsequent to my address) new rules of procedure, which had been drawn up by the Supreme Court Bench, were presented to Parliament, and having lain upon the table of the House for the prescribed period, automatically became law in strict accordance with the statutory procedure. Further, the new rules were gazetted and normally would have come into force on April 1 last.

Dissatisfaction on the part of some members of the legal profession began to find expression in newspaper correspondence, and it grew until we read that the Governor in Council (in effect the Ministry) had postponed the date of operation of the new rules until their consideration by Parliament at its next session.

The false battle cry was raised that the civil liberties of the citizen were in danger of being filched from him and that the right to have his wrongs tried by a jury of his fellows would be his no longer. This was sufficient to stampede any politician, and several days before the Bar meeting it was reported that a meeting of the Labour Party had decided to resist the new rules at all costs. In the present state of politics in Victoria, this was sufficient to prevent a fair discussion of the merits of the rules in Parliament and made the resolution of the Bar meeting quite unnecessary, as neither of the other two political parties could afford to be left behind and to seem less zealous in protecting the rights of their constituents. To the extent that the protest of the Bar followed that of the Labour Party, I must admit I was in error in attributing so much political influence to the Bar protest.

When the matter came before Parliament, the exposition of the rules by the Minister was very feeble and almost apologetic, and failed to stress that the clear right to trial by jury still existed and that the new rules merely brought the practice of our State courts into line with that in England, where surely civil liberty is as highly prized. Presumably the British Parliament in adopting the new rule had just as much regard for "the public interest in a matter of grave importance" as the Bar of Victoria had in opposing it.

The discussion was very brief and it is not surprising that the "layman" referred to by Mr. Norris, who moved the rejection of the rules, was the leader of the Labour Party, and the unanimity of the Assembly was as unique as it was impressive to all admirers of democratic govern-

ment, but not more extraordinary than the unanimity at the meeting of the Bar. A leading member of the opposition, a member of the legal profession, since said to me emphatically "We are not going to have judges making our laws for us", which well illustrates the attitude of the politician lawyer.

Mr. Norris resents my use of the term "outside influences", and asks for an explanation. May I draw a parallel? If a body of five leaders of the medical profession specially chosen for their knowledge and experience were empowered by the Constitition to draw up rules for the health of the community, and, the statutory requirements having been strictly followed, a set of rules had actually been gazetted and a date fixed for their operation, I think we should be justified in attributing their suspension and ultimate abrogation by Parliament as due to "outside influences"—in other words, to influences other than those designed by law to control these matters.

I fancy that the legal profession is more sensitive to the term "unscrupulous legal practitioners" than we are to "unscrupulous medical practitioners". Unfortunately both exist, and our experience leads me to the conviction that the unscrupulous legal type would be less in evidence without the bogy of a jury trial to back up his usually outrageous claims.

The kindly meant consolation in Mr. Norris's concluding paragraph has been unavailingly extended to us before—as long ago as 1930 in another newspaper correspondence. Since then, in 1936, a defendant medical practitioner made application to the Supreme Court for trial by a judge without a jury in an action for five thousand pounds damages following the treatment of a patient for a fractured neck of the femur. Obviously much scientific investigation as to causation, pathology and treatment is essential in such a case.

In the course of a judgement, which was generally sympathetic towards the applicant, the learned judge said: "I do not think I should be doing right in allowing any personal view that a jury is a most unsuitable tribunal for such a case as the present to be the decisive factor". He refused to take the case away from a jury, and concluded his judgement with these words: "If jurors are not to try questions such as this, I think it must be under rules different from ours as they stand at present." This judgement was upheld on appeal to the Full Court and there the matter stands as the rules remain unchanged.

Yours, etc.,

D. MURRAY MORTON,
President of the Medical Defence Association of Victoria, Limited.

105, Collins Street,
Melbourne, C.1,
November 28, 1938.

NATIONAL HEALTH INSURANCE.

SIR: It is refreshing to read your leading article of November 26. The pity is that more of this sort was not written long ago. One point in your article calls for comment. You state: "In the course of time medical men became accustomed to the bogy, and despite the warnings of their leaders, ignored it." I take it that our leaders are the members of the Federal Council and the various Branch councils. In this matter the chief thing for which they have become conspicuous has been their lack of leadership. Can anyone point to a single warning note or a single constructive suggestion that emanated from them in regard to national insurance before the avalanche descended?

In the case of the Branch councils possibly there may be some excuse. Not unnaturally they would look to the Federal Council for a lead. Nevertheless it was their plain duty to keep themselves and their members informed on the likely course of events. If the Branch councils were themselves informed, they certainly failed to pass the information on to their members.

The Federal Council cannot be excused. Despite the fact that it had Sir Walter Kinnear's report before it in August, 1937, and must have known the type of service contemplated, it did absolutely nothing to guide the members or to seek their opinions. Later it entered into an agreement with the representatives of the Federal Government. And what an agreement it was! It said almost in so many words: "We think the terms and conditions are satisfactory, but we don't know what our members think." And then came the leading article of May 14! Still they fail to give a lead or make any attempt to attain a united front on the part of the profession.

There is a clause in the constitution of the Federal Council under which it is laid down that delegates from the Branches shall be elected by the Branch councils. In the days of the Federal Committee, delegates were elected by the members of the Branches. The reason for the change is not clear. The present arrangement is wrong in principle and should be altered. The Federal Council has failed to help them, so members must fend for themselves in the matter of national insurance.

Yours, etc.,

D. R. W. COWAN.

172, North Terrace,
Adelaide,
November 29, 1938.

ACCIDENTAL HÆMORRHAGE.

SIR: The article on accidental hæmorrhage by Dr. M. T. Drummond, published in the journal of November 26, 1938, should be most interesting to all practising obstetrics as the severe cases of this condition are so rare that one must learn chiefly from the experiences of others.

Should one take the published series of cases as a guide one feels very hesitant about accepting reported statistical proof, quoted by Dr. Drummond, which favours conservative treatment of these cases. Actually the cases I have had the opportunity of seeing and attending suggest the advisability of immediate Cæsarean section for the severe accidental hæmorrhage, and unless my logic is astray, this series confirms me in that opinion.

The author's comment on Case VI, "the operation was performed early to give the patient the best chance of surviving", should, I feel, have applied equally to the other five cases. Might I point out that not only must one consider the patient's chances of survival, but also the patient's subsequent chance of conception and successful termination of a further pregnancy. In obstetrics as in gynæcology our trend is towards conservatism, and the fate of the uterus in these cases must warrant consideration. In the six reported cases hysterectomy was necessary in three and death occurred in a fourth. In all cases operation was performed, and although the three hysterectomy cases survived, the necessity for this procedure undoubtedly influenced prognosis. I would suggest that immediate operation in all six cases would have resulted in at least as satisfactory a survival rate, and limitation of uterine damage by earlier operation would surely have influenced necessity for hysterectomy.

The question of the uterus applies particularly to the *primiparæ*, and it is in this same case that one must anticipate a longer labour. There is no question that with satisfactory dilatation, good pains and external hæmorrhage, one would be inclined to conservative treatment of such a case; but with poorer pains, little dilatation and all evidence of a severe accidental hæmorrhage, procrastination will result in operation at a stage when the maternal condition is poorer and the saving of the uterus doubtful.

In view of one's experience and this series of cases, it appears likely that published statistics, with which I am familiar, must include an appreciable number of milder accidental hæmorrhages. Should such cases be included results would be greatly influenced.

Dr. Drummond and his colleagues apparently favour Cæsarean section for these severe cases, so herein there is no criticism to offer. I would be interested to have an expression of opinion from him as to whether, in view of this published series, he would still favour primary conservative treatment.

Yours, etc.,

HUGH C. CALLAGHER.

Shell House,
205, St. George's Terrace, Perth,
December 1, 1938.

IMMUNITY IN SYPHILIS.

SIR: McDonagh is in agreement with Fournier that a person who has syphilis never becomes reinfected, that is, syphilis never doubles. There are others who deny this. From what I have observed I am inclined to agree with the former. But it would seem that the presence of any *Spirochætæ* in the blood stream renders the person intolerant of others, and if infected with one *Spirochæte* they cannot be with others. Now there are many *Spirochætæ*, some pathogenic and others not, but all capable of giving, with a certain type of person, a positive blood Wassermann reaction. The laboratory is not wrong; it is our interpretation that may be.

I consider that it is the presence of other *Spirochætæ* in the blood, which can be shown by a positive blood Wassermann reaction, which confers immunity to infection from syphilis. It is these cases that give us trouble, and when the reaction disappears are classed either as syphilis cured in the early stages, false positives, or faulty serology.

Yours, etc.,

J. MORRIS ROE.

Victory Chambers,
Queen Street,
Brisbane.
December 1, 1938.

KERATOPLASTY.

SIR: In view of the fact that the operation of keratoplasty or corneal grafting has received attention in the Press recently, I think it is necessary that the position as regards this operation should be made quite clear.

The matter was first brought up in the Legislative Assembly by the Minister for Health, Mr. FitzSimons, who stated that he had been advised that the results of this operation were doubtful, and further stressed as a contra-indication the difficulty of obtaining donors, that is, suitable eyes from which to take the grafts. (This was reported in *The Sydney Morning Herald* of November 25, 1938.)

It was pointed out in reply on November 28, 1938 (in *The Sydney Morning Herald*) by "Ophthalmic Surgeon" that the Minister had been misinformed and that from the results obtained at the Central London Ophthalmic Hospital it was found that "when the cases were suitable, the results were excellent, normal sight being restored to people hitherto blind".

On November 30, 1938, in *The Sydney Morning Herald*, the Council of the Ophthalmological Society of New South Wales quoted the results of Mr. Tudor Thomas, F.R.C.S., associate-surgeon to the keratoplastic department of the Central London Ophthalmic Hospital, "that in 56 operations performed to date, 23 only have shown benefit, great or slight". The council further stressed their point that "these operations, claimed as successes, are far from restoring normal sight".

It was my privilege for over twelve months to be associated at this hospital with Mr. Tudor Thomas, for whose work I have the greatest admiration and respect, and so I had the opportunity of personal contact with the majority of these cases quoted. It was an undisputed fact that in a small number of cases the operation was completely successful, normal vision being restored. Further, it was found, and this is most important, that it was possible to foretell almost with certainty which cases would be successful.

In considering this series of cases it must be remembered that Mr. Tudor Thomas was the pioneer of this work in Great Britain, and that in doing some of the early cases, although a great amount of work had been done by him on animals, perfection of operative technique was an important consideration. Improvement in sight was not expected in eyes with other abnormalities present and when the operation was done for cosmetic purposes.

The important point is what case is suitable for operation. The answer is blindness associated with opaque corneæ, without active vascularization, from causes such as interstitial and other forms of keratitis, trachoma *et cetera*, provided there is no other abnormality, which cannot be remedied by suitable surgical procedure. In my opinion, if the cornea is vascular the graft will become opaque.

The technique of operation used consisted of removing the central opaque area with a special trephine and replacing it by the slightly smaller graft of clear cornea from the donor. The graft is kept firmly in position by means of intracorneal sutures. Post-operative complications were few, and in no case did the eye have to be removed.

The question of donors is a difficult one, but easily overcome if there is cooperation. The ideal is an eye with perfectly clear cornea, removed for malignant tumour or other reason. It was possible to keep these eyes for at least eight hours after enucleation before taking the graft. Grafts were also obtained from the cadaver and successfully transplanted.

It is freely admitted that the indications for operation are limited and that "of all blind persons only a very small percentage would be cases to which the operation might be advantageous"; but is that sufficient reason to condemn an operation which surely has "a definite but limited place in ophthalmic surgery"?

Yours, etc.,

FRANK CLAFFY.

"Beanbah",
235, Macquarie Street,
Sydney.
December 1, 1938.

THE CULTURAL TEST OF WARD AND RUDD.

SIR: It would be unfortunate if any bacteriologist contemplating the use of the cultural tests of Ward and Rudd for detection of hæmolytic streptococci potentially pathogenic to man, were deterred by Miss Hildred Butler's criticisms in this journal, November 26, 1938. Miss Butler's dissatisfaction with the method appears to be due, in part to a misapprehension of the function of the tests, in part to the use of a comparatively small collection of streptococci, many of vaginal origin, and possibly to divergence of the medium employed from that which gives optimal results.

Miss Butler concludes that these tests cannot replace Lancefield's precipitin test. No such claim was made by Ward and Rudd. Briefly stated, their thesis is that a hæmolytic streptococcus, isolated from a human source, which is non-capsulated, and if non-capsulated, fails to produce opalescence in serum broth, in all probability does not belong to group *A*. They use as a convenient criterion of capsulation, the production of a "feathery" colony in a special serum-peptone-agar medium. They themselves point out occasional discrepancies: firstly, the rare group *A* strain which does not comply with either test; secondly, the occasional non-*A* strain which gives a "feathery" type of colony. All they claim is good correlation between the two methods, and that since the cultural methods are far less time-consuming, they are more suited for a busy hospital laboratory.

Miss Butler's criticism of the new methods can be considered under three headings: (i) incorrect exclusion of strains which, belonging to group *A*, are presumably human pathogens; (ii) inclusion of strains which, being non-*A*, are commonly accepted as unlikely human pathogens; and (iii) an undue preponderance of doubtful results owing to difficulty in determining what constitutes a "feathery" colony.

In respect of the first point, Miss Butler's findings agree with those of the authors of the test and with our personal experience. Only very rarely does a group *A* strain fail to give either a feathery colony or opalescence. Ward and Rudd suggest that such strains are unstable and may throw typical variants. We have encountered one such strain, which failed to give opalescence in two tests but did in a third trial. Of Miss Butler's group *A* strains, 81 out of 83 were correctly included as potential pathogens, a very satisfactory correlation.

The correlation between the cultural and precipitin methods was less satisfactory in the non-*A* strains in Miss Butler's series, which was small, consisting of only 28 cultures. It is deduced, from the context, though it is not expressly stated, that many if not all of these cultures were isolated from cases of puerperal pyrexia and were presumably, therefore, human pathogens. One notices immediately the preponderance of *B* and *G* cultures in comparison with group *C* strains (21 : 7). In 713 strains of hæmolytic streptococci isolated by us from human sources this year, mainly from throat swabs of healthy people, of cases or contacts of scarlet fever patients, and from infected tonsils, we have encountered only 30 *B* and *G* strains, as compared with 45 *C* strains. Davis and Gudzar, who grouped 78 hæmolytic streptococci from healthy throats, found no *B* strains at all.

It is the group *B* strains which are most likely to cause confusion (11 of 12 in Miss Butler's series giving an incorrect or doubtful result), and her collection may not be a fair sample of the general distribution of non-*A* streptococci. Our series of such strains is larger, but not large enough to permit generalization. Of 75 cultures, 45 belong to group *C*, 22 to group *B*, and 8 to group *G*. All the *C* strains, nine of the *B* strains, and seven of the *G* strains gave compact colonies without opalescence and were correctly classed as non-*A*, that is, 81%. Of the remaining 13 group *B* strains, seven were chromogenic, producing a distinctive colony with a yellow "head" and a white "tail". These colonies are, in our limited experience, diagnostic of group *B*. This brings the total of correct results to 68 of 75 cultures (91%). The remaining six group *B* strains and the one group *G* strain produced "Medusa-head" colonies.

We experience no difficulty in deciding, on inspection, whether a colony is compact or feathery, and therefore have no doubtful results. At one stage we did have trouble in preparing successive batches of media giving clear-cut differentiation. On communicating with Professor H. K. Ward, he advised us of variations in the quality of different lots of agar, even of the same brand, and of the necessity of adjusting the agar concentration to obtain the optimal degree of "sloppiness". Also, on the advice of Dr. Helen Kelsey, we adopted a modification in the preparation of the serum-peptone-agar developed by Mr. D. Harvey in her laboratory. A mixture of two parts of normal saline with one part of tryptic digest broth is substituted for normal saline in Ward and Rudd's formula, with excellent results. It is essential that there should be only a few well-distributed colonies in the tube.

In our opinion, therefore, the cultural method is suitable for the purpose for which it was designed, that is, as a presumptive test of pathogenicity in the hospital laboratory. That it includes as possible pathogens more non-*A* strains than it excludes *A* strains is a good fault. It identifies positively about half the *A* strains in our experience, since we have not encountered any non-*A* strains giving opalescence in serum broth. It does not eliminate the precipitin test in the research laboratory, nor was it intended to do so. On the other hand, it gives information which the precipitin test does not. Its function may be compared with the diagnosis of diphtheria by microscopical examination of the culture of a throat swab, which is sufficiently accurate for routine work, but needs confirmation in doubtful cases by further tests. If every culture identified as *Corynebacterium diphtheriæ* microscopically had to be further examined by the full fermentation, serological and virulence tests, it would be impossible to cope speedily with the diagnosis of diphtheria in any existing diagnostic laboratory.

Yours, etc.,

E. V. KEOGH.

Commonwealth Serum Laboratories,
Parkville, N.2,
Victoria.
December 2, 1938.

ENDONASAL ANTROSTOMY: AN X RAY STUDY.

SIR: Dr. T. G. Millar's interesting report in your issue of October 22, 1938, "Endonasal Antrostomy: An X Ray Study", endorses the generally accepted opinion in this country. Abroad, however, this is not the case according to my observations. In London there is a curious objection to therapeutic lavage, the grounds for which I found most inadequate; and in the United States of America this treatment is said to have fallen largely into the hands of the quacks and to be used as a commercial method on all and sundry.

At the Mayo Clinic they do not do even a diagnostic puncture, but perform endonasal antrostomy on all clinical and radiological cases. The reason for this is that their patients cannot, as a rule, stay there over a long period; but it seemed to me a very drastic procedure. They do the operation very satisfactorily under local anæsthesia.

Dr. Millar's article suggests that endonasal antrostomy is an operation which should be performed very seldom. I do not think he means to convey this idea, since in young children and in some acute cases where no lavage fluid can be got through, it is the only effective treatment, and the clinical results in these cases are excellent.

Yours, etc.,

R. H. BETTINGTON.

185, Macquarie Street,
Sydney,
December 2, 1938.

GENERAL ANÆSTHESIA FOR DENTAL SURGERY.

SIR: By courtesy of a well-known Adelaide doctor and very experienced anæsthetist I have had the privilege of reading Dr. Heath's interesting article in your journal. His statement that "The seated upright, and semi-reclining positions, in the chair are undoubtedly the most convenient for . . . teeth extraction . . ." is obviously due to the fact that those positions are practically the only ones adopted by the great majority of dentists. Over forty years' experience of operating in various positions, and often under primitive conditions, has convinced me that teeth may be extracted just as easily, and much more safely, with the patient in the recumbent position, with the head gently dropped (after anæsthesia has been secured) to the Rose position used formerly for tonsillectomy and still for post-nasal work. To be more correct, I use a modified Rose, at an angle of about 40°, with the head resting firmly on the table-leaf. This gives no problems *re* slipping teeth or broken roots; for these cannot fall upwards. All blood can be controlled by triangular gauze packs, and a Shipway with intranasopharyngeal catheter prevents a renewed induction with its risk of clot inspiration. Dr. Heath's concluding counsel for the period when reflexes are being reestablished, ". . . the bed or couch on which the patient is reclining should have the foot raised about six inches, and the patient should be kept without a pillow", bears out my claim for safety and practicability. As this is the same principle prevailing in the modified Rose position, why not adopt it from the first? If a very ordinary fellow like myself can operate reasonably

successfully, and quite easily, this way, surely the thousands of more skilful dental surgeons can employ it beneficially to all parties. I claim no originality; for the idea was suggested to me forty-two years ago by the late Dr. John Johnson, of Mount Gambier Hospital, then assistant colonial surgeon, and a brilliant surgeon at that.

Another phase of general anæsthetics is well worth serious consideration and decided revision. It is notorious that some dentists do not like the odour of ether about their rooms, and so do their extracting on what Dr. Renton in his excellent letter calls advisedly "the smash and grab" system. The quicker the job, the less ether; *ergo* less smell. Now, is it not so that any medical man with a fine sense of sane surgery would prefer to see a calmly and carefully performed exodontia than a trust-to-luck, greased-lightning effort? He may appreciate a saving of time, but down in his heart he cannot admire the operator, neither would he care to trust his own refractory molars nor those of his loved ones to the catch-as-catch-can wizards who often break a tooth unnecessarily.

I conclude with this suggestion to medical men. For years we have invoked the aid of the anæsthetist with the Shipway in the preparation of cavities for fillings in the mouths of very nervous young children. In every case we have not only been able to complete the filling work afterwards without distress to the patient, but have been enabled, as the child became older, to build up its courage for future work without a general anæsthetic. Early impressions are too important a psychological factor to disregard.

Yours, etc.,

111, Prospect Road,
Prospect,
Adelaide.
December 2, 1938.

T. AYLESBURY BROWN.

EUROPEAN CONSULTANTS.

SIR: In the journal of nineteenth instant Dr. Larbalestier has some sort of complaint about people in Sydney styling themselves "European consultants". Before any action can be taken against them it will be necessary to eliminate the unqualified practitioners, namely, herbalists, biochemists, osteopaths, chiropractors and other spine-pressers and leg-pullers. I have had conversations with these latter practitioners, and the ignorance they display in elementary pathology, physiology and dietetics is amazing.

I understand that the so-called "European consultants" are fully qualified medical practitioners who have been refused registration. I believe that they will do more harm to the unqualified practitioners than to the registered doctor with his lodge patients, prescriptions, certificates, surgery and other privileges.

Re Dr. Larbalestier's fear that these people may be registered and used by the Government to defeat the profession in the matter of national insurance, I would point out that registration is a State matter whereas national insurance is a Commonwealth affair.

The only salvation for the profession is for every doctor in Australia to join those others who have notified their local members of Parliament that they will vote against them at the next election unless the member opposes the National Health Insurance Bill.

Yours, etc.,

Brisbane,
November 30, 1938.

"UNITY."

Proceedings of the Australian Medical Boards.

TASMANIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Act* of 1918, of Tasmania, as duly qualified medical practitioners:

Ashbarry, Reginald Ernest, M.B., B.S., 1937 (Univ. Sydney), Hamilton.
Shatin, Roman, M.B., B.S., 1935 (Univ. Melbourne), Derby.
Osborne, Ethel Elizabeth, M.B., B.S., 1923 (Univ. Melbourne), Beaconsfield.
Rowntree, Cameron Sutcliffe, M.B., B.S., 1937 (Univ. Sydney), Royal Hobart Hospital, Hobart.

QUEENSLAND.

THE undermentioned have been registered, pursuant to the provisions of *The Medical Acts*, 1925 *to* 1935, of Queensland, as duly qualified medical practitioners:

Heard, Kenneth Harold, M.B., B.S., 1936 (Univ. Adelaide), Springsure.
Hirschfeld, Franz Konrad Saddler, M.R.C.S. (England), L.R.C.P. (London), 1929, F.R.C.S. (England), 1932, Brisbane.
Laver, Jack Charles, M.B., B.S., 1934 (Univ. Melbourne), Cloncurry.

NEW SOUTH WALES.

The undermentioned have been registered, pursuant to the provisions of the *Medical Act*, 1912 *and* 1915, of New South Wales, as duly qualified medical practitioners:

Day, Robert Sydney, M.B., B.S., 1934 (Univ. Adelaide), Yeoval.
Long, Norman Pratt, M.B., B.S., 1936 (Univ. Melbourne), Corowa.

Books Received.

THE MEDICAL APPLICATIONS OF THE SHORT WAVE CURRENT, by W. Bierman, M.D., including a discussion of its Physical and Technical Aspects by M. M. Schwarzschild, M.A.; 1938. London: Baillière, Tindall and Cox. Medium 8vo, pp. 396, with illustrations. Price: 22s. 6d. net.

A TEXTBOOK OF BIOCHEMISTRY FOR STUDENTS OF MEDICINE AND SCIENCE, by A. T. Cameron, M.A., D.Sc., F.I.C., F.R.C.S.; Fifth Edition; 1938. London: J. and A. Churchill Limited. Demy 8vo, pp. 422, with 3 plates and 25 text figures. Price: 15s. net.

THE TROUBLED MIND: A STUDY OF NERVOUS AND MENTAL ILLNESS, by C. S. Bluemel, M.A., M.D., F.A.C.P., M.R.C.S.; 1938. London: Baillière, Tindall and Cox. Large crown 8vo, pp. 530. Price: 13s. 6d. net.

THE PRACTITIONER HANDBOOKS. MODERN ANÆSTHETIC PRACTICE, edited by H. Rolleston, Bt., G.C.V.O., K.C.B., M.D., F.R.C.P., and A. A. Moncrieff, M.D., F.R.C.P.; 1938. London: Eyre and Spottiswoode Limited, for *The Practitioner*. Demy 8vo, pp. 231, with illustrations. Price: 10s. 6d. net.

CHEMICAL ANALYSIS FOR MEDICAL STUDENTS: QUALITATIVE AND VOLUMETRIC, by R. E. Illingworth, Ph.D., B.Sc., with a foreword by G. Barger, Sc.D., LL.D., F.R.S.; 1938. Edinburgh: E. and S. Livingstone. Crown 8vo, pp. 153. Price: 5s. net.

THE AMBULANCE VADE-MECUM: J. F. SUTHERLAND'S "FIRST AID" TO THE INJURED AND SICK, edited by H. Sutherland, M.D.; Fortieth Edition; 1938. Edinburgh: E. and S. Livingstone. Demy 32mo, pp. 62, with illustrations. Price: 6d. net.

CATECHISM SERIES: ANATOMY, Part II, by C. R. Whittaker, F.R.C.S.E., F.R.S.E.; Fifth Edition, revised and enlarged; 1938. Edinburgh: E. and S. Livingstone. Crown 8vo, pp. 73. Price: 1s. 6d. net.

YAWS (FRAMBŒSIA TROPICA), by H. D. Chambers, M.B., Ch.B., with a foreword by D. Wilkie, O.B.E., M.D., F.R.C.S., F.A.C.S.; 1938. London: J. and A. Churchill Limited. Crown 8vo, pp. 183, with 15 illustrations. Price: 5s. net.

POPULATION: TODAY'S QUESTION, by G. F. McCleary; 1938. London: George Allen and Unwin Limited. Crown 8vo, pp. 222. Price: 6s. net.

SCHAFER'S EXPERIMENTAL PHYSIOLOGY, by W. A. Bain, Ph.D., F.R.S.E.; Sixth Edition; 1938. London: Longmans, Green and Company. Demy 8vo, pp. 192, with 97 illustrations. Price: 7s. 6d. net.

Diary for the Month.

DEC. 20.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JAN. 3.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JAN. 10.—New South Wales Branch, B.M.A.: Council (Quarterly).
JAN. 12.—South Australian Branch, B.M.A.: Council.
JAN. 13.—Queensland Branch, B.M.A.: Council.
JAN. 25.—Victorian Branch, B.M.A.: Council.
JAN. 27.—Queensland Branch, B.M.A.: Council.

Medical Appointments.

Dr. E. H. Miles has been appointed Government Medical Officer at Sutherland, New South Wales.

* * *

Dr. J. B. Mathieson and Dr. K. F. D. Sweetman have been appointed Medical Inspectors of Seamen, in accordance with the provisions of the *Navigation Act*, 1912 *to* 1935.

* * *

Dr. J. B. Mathieson has been appointed a Medical Inspector of Shipping, pursuant to the provisions of the *Navigation Act*, 1912 *to* 1935.

* * *

Dr. M. J. Frizell and Dr. B. G. Cooley have been appointed Medical Officers in the Medical Branch of the Department of Public Instruction of New South Wales.

* * *

Dr. G. Wisewould has been appointed a Medical Referee at Trentham, Victoria, pursuant to the provisions of the *Workers' Compensation* Acts, of Victoria.

* * *

Dr. C. E. Cook has been appointed Medical Officer of Health to the Municipality of Claremont, in accordance with the provisions of *The Health Act*, 1911 *to* 1937, of Western Australia.

* * *

Dr. G. V. F. Doyle has been appointed a Certifying Medical Practitioner and a Medical Referee at Melbourne, in accordance with the provisions of the *Workers' Compensation Acts*, of Victoria.

* * *

Dr. F. H. Makin has been appointed a Member of the Metropolitan Infectious Diseases Hospital Board of Adelaide, in pursuance of the provisions of the *Metropolitan Infectious Diseases Hospital* Act, 1922 *to* 1935, of South Australia.

Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser", pages xvi to xix.

BRISBANE AND SOUTH COAST HOSPITALS BOARD, BRISBANE, QUEENSLAND: Relieving Assistant Physicians.
CHILDREN'S HOSPITAL (INCORPORATED), PERTH, WESTERN AUSTRALIA: Junior Resident Medical Officers.
FREMANTLE HOSPITAL, FREMANTLE, WESTERN AUSTRALIA: Junior Resident Medical Officer.
NATIONAL HOSPITAL, QUEEN SQUARE, LONDON, ENGLAND: Research Fellowship.
ROYAL HOBART HOSPITAL, HOBART, TASMANIA: Resident Medical Officers.
ROYAL HOSPITAL FOR WOMEN, PADDINGTON, NEW SOUTH WALES: Honorary Assistant Pædiatrician.
SYDNEY HOSPITAL, SYDNEY, NEW SOUTH WALES: Senior Resident Medical Officer.
THE NEW SOUTH WALES COMMUNITY HOSPITAL (INCORPORATED), SYDNEY, NEW SOUTH WALES: Staff Vacancies.
UNIVERSITY OF OTAGO, DUNEDIN, NEW ZEALAND: Professor of Medicine.
VICTORIAN EYE AND EAR HOSPITAL, MELBOURNE, VICTORIA: Resident Surgeons.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phœnix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 178, North Terrace, Adelaide.	All Lodge appointments in South Australia. All contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.

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